NASA TM-80037

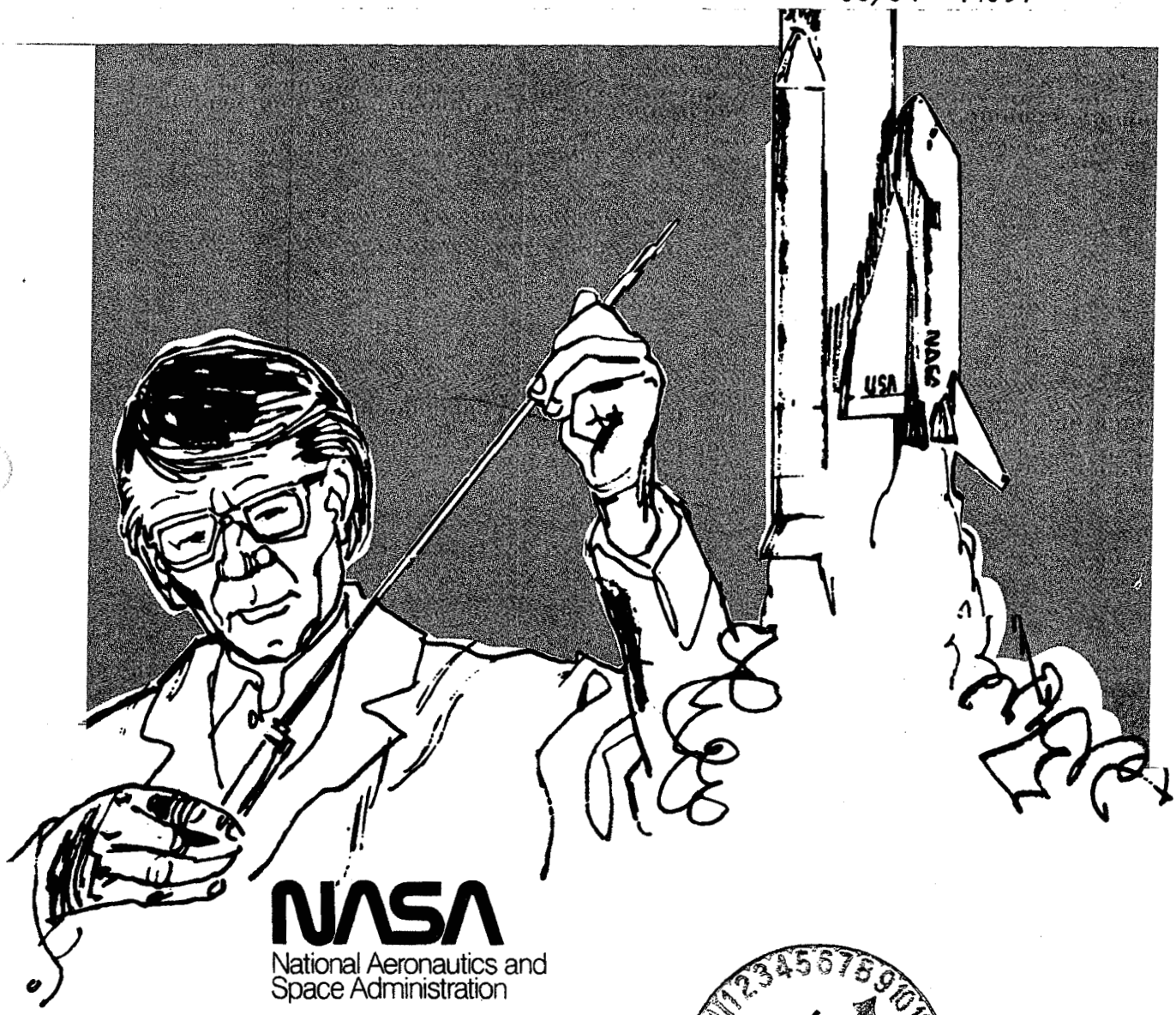
ASA'S UNIVERSITY PROGRAM

ACTIVE GRANTS & RESEARCH CONTRACTS

(NASA-TM-80037) NASA'S UNIVERSITY PROGRAM: ACTIVE GRANTS AND RESEARCH CONTRACTS, FISCAL YEAR 1978 (National Aeronautics and Space Administration) 339 p HC A15 CSCL 05B

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NASA
National Aeronautics and Space Administration

University Affairs Office
Washington, D.C. 20546

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FISCAL YEAR 1978

IMPORTANT NOTICE

This report is compiled primarily from information obtained from two internal NASA sources:

1. "CASE Report on Support of Colleges and Universities" (NASA Form 1356).
2. "Individual Procurement Action Report" (NASA Form 507).

Therefore, other sources should be used for completing Forms 507 or 1356.

NASA'S UNIVERSITY PROGRAM

ACTIVE GRANTS AND RESEARCH CONTRACTS

FISCAL YEAR 1978

National Aeronautics and Space Administration
University Affairs Office
Washington, D.C. 20546

Acknowledgements

This report was developed in Policy Coordination in the University Affairs Office under the guidance of W. A. Greene, Chief. Preparation of the input data for processing was accomplished by Doris J. Goodwin, Management Information Systems Officer. The Scientific and Technical Information Branch produced the reproduction masters on the Photon Computer.

Additional Copies

This publication is available from the National Technical Information Service (NTIS), 5285 Port Royal Rd., Springfield, Virginia 22161 for $6.25.

FOREWORD

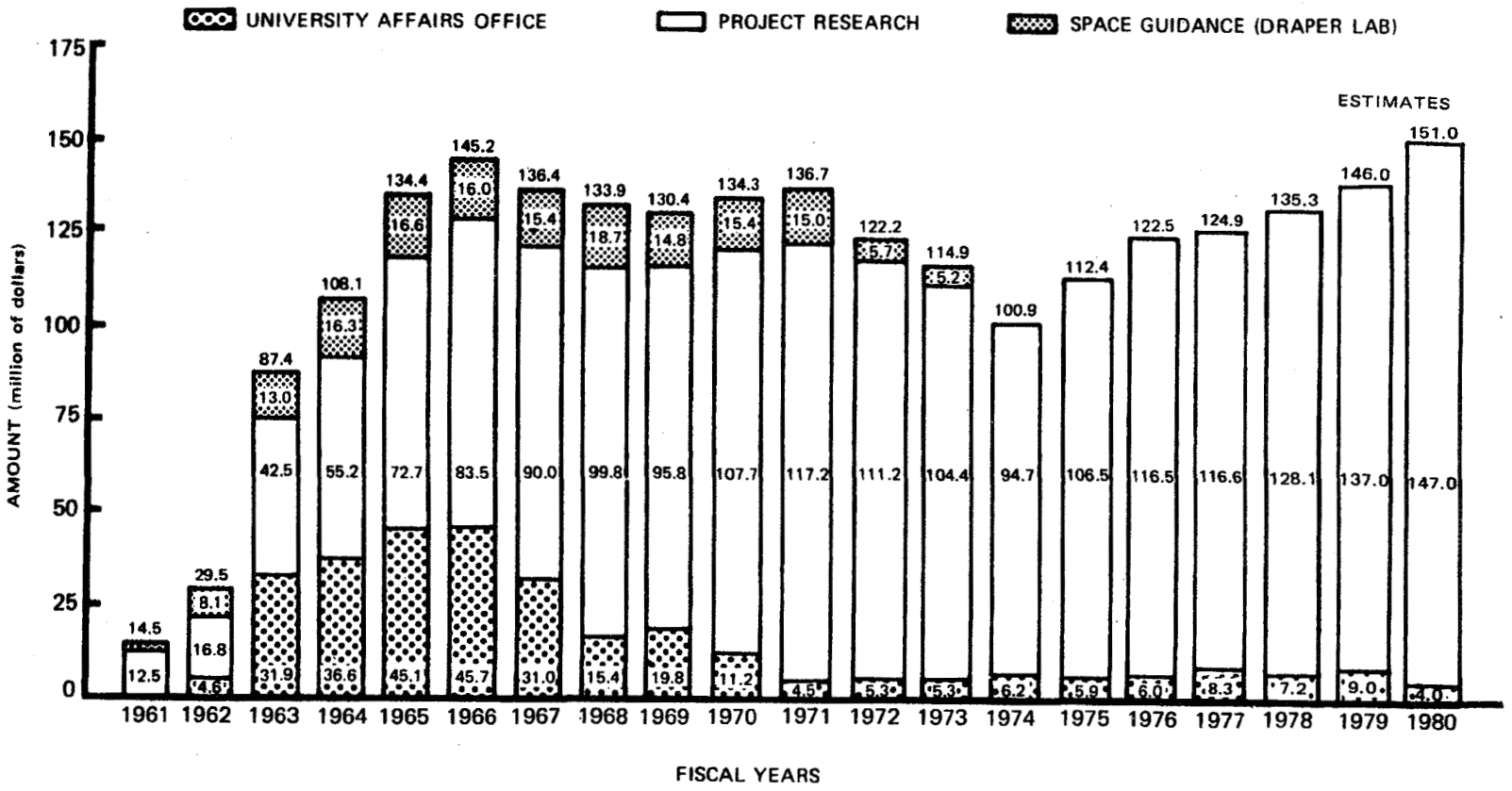
As basic policy NASA believes that colleges and universities should be encouraged to participate in the nation's space and aeronautics program to the maximum extent practicable. Indeed, universities are considered as partners with government and industry in the nation's aerospace program. NASA's objective is to have them bring their scientific, engineering, and social research competence to bear on aerospace problems and on the broader social, economic, and international implications of NASA's technical and scientific programs. It is expected that, in so doing, universities will strengthen both their research and their educational capabilities to contribute more effectively to the national well-being.

NASA Field Centers and certain Headquarters Program Offices provide funds for those R&D activities in universities which contribute to the mission needs of that particular NASA element. Although NASA has no predetermined amount of money to devote to university activities, the effort funded each year is substantial. (See the bar chart on the next page). This annual report is one means of documenting the NASA-university relationship, frequently denoted, collectively, as NASA's University Program.

The University Affairs Office (UAO) serves as a focal point for NASA's relationships with colleges and universities. One of its roles is to provide information on the NASA University Program. The present document is designed to serve several purposes and a wide range of audiences from private individuals to NASA employees. The emphasis is on the technical content of the program, rather than on fiscal data, which is available separately from UAO. As some terminology will not be familiar to all readers, a "User's Guide" is included to facilitate the fullest use of the material related to the interests of any particular reader.

Information on obtaining reports resulting from these projects may be obtained from: NASA, Scientific and Technical Information Branch, Code NST, Washington, DC 20546.

NASA OBLIGATIONS TO UNIVERSITIES



FISCAL YEARS

NOTES: 1. Excludes obligations to or through Federally Funded Research and Development Centers (JPL, Lincoln Lab., SREL)
2. Change in status from "university" to "non-profit" for three organizations accounts for $10.1M of the difference between FY73 and FY74. (Draper Lab, ERIM, Dudley Observatory).
3. University Affairs Office includes 1962-1971 Sustaining University Program.
4. Omitted Obligations: Transition Period (July-Sept 1976). $27.7M; FY59, $3.6M; FY60, $5.0M.

Source: NASA University Affairs Office

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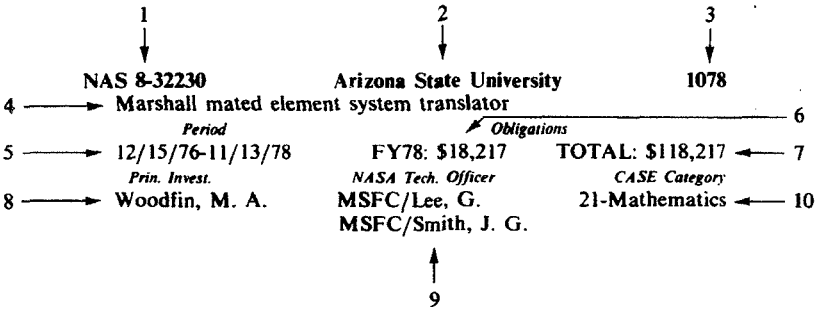
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Appendix C – Cross Index by First Technical Officer Location 283

USER'S GUIDE

The University Program Report provides current information and related statistics for each grant or research contract active during the report period. The following guidance is provided as an aid to the reader in readily locating material of interest and in optimizing the use of this document.

I. Typical Citation



1. Grant or Contract Number.
2. Institution Name.
3. Accession Number.
4. Brief work description.
5. Approximate period of performance.
6. Amount (if any) actually provided during the indicated fiscal year.
7. Total amount actually provided during the indicated period of performance.
8. Principal Investigator(s) at the educational institution.
9. NASA Technical Officer(s) and organizational location.
10. CASE Field of Science and Engineering code and name.

II. NASA Installations

NASA installations are included in the citation as abbreviations (item 9). The following listing of installations will be useful to those desiring further information on specific projects.

Abbrev.	Installation Name and Address	Telephone Number for Information
ARC	Ames Research Center NASA Moffett Field, CA 94035	415/965-5000
DFRC	Dryden Flight Research Center NASA P.O. Box 273 Edwards, CA 93523	805/258-3311
GSFC	Goddard Space Flight Center NASA Greenbelt, MD 20771	301/982-5042
JPL	Jet Propulsion Laboratory 4800 Oak Grove Drive Pasadena, CA 91103	213/354-4321
JSC	Johnson Space Center NASA Houston, TX 77058	713/483-3111
KSC	Kennedy Space Center NASA Kennedy Space Center, FL 32899	305/867-7113
LARC	Langley Research Center NASA Langley Station Hampton, VA 23665	804/827-1110
LERC	Lewis Research Center NASA 21000 Brookpark Road Cleveland, OH 44135	216/433-4000
MSFC	Marshall Space Flight Center NASA Marshall Space Flight Center, AL 35812	205/453-2121
NSTL	National Space Technology Laboratories NASA NSTL Station, MS 39529	601/688-2211

WFC	Wallops Flight Center NASA Wallops Island, VA 23337	804/824-3411
HQ	NASA Headquarters Washington, DC 20546	202/755-2320

The abbreviation for NASA Headquarters, HQ, usually carries a suffix, for example HQ-LU, which denotes a particular office and general area of responsibility. (LU is the University Affairs Office.) A full listing of the suffix letters and information on NASA's organizational structure may be found in the NASA Headquarters Telephone Directory. (The Directory is for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.)

III. CASE Fields of Science and Engineering

The National Science Foundation (NSF) operates a government-wide system (CASE) for collecting and analyzing data on support to colleges and universities. Participating agencies report annually to NSF which in turn issues *Support to Universities, Colleges and Selected Nonprofit Institutions.* The CASE Fields, used in the extensive tabulations contained in that document, form the only consistent classification system for government sponsored research. The fields are listed in full in Appendix B.

IV. Cross-Indexes

The cross-indexed Appendices are related to the citations (descriptions) by the accession number (item 3). The accession number has meaning only in this report; it is in no way permanently associated with nor does it uniquely identify a specific grant or contract anywhere except in the present report. Accession numbers are assigned sequentially to the citations, beginning with 1000. Thus, when an entry of interest is identified in any one of the Appendices, the associated accession number allows ready location of the full description in the body of the report.

Appendix A – Given only the grant or contract number this index enables the reader to locate the citation. The first page tells how to distinguish grants from contracts.

Appendix B – This index provides rapid access to all projects in a particular area of endeavor, as defined by the CASE Fields. This listing is also easily used to determine the institutions and principal investigators conducting NASA projects in a field.

Appendix C – The types of effort sponsored by each NASA installation may be determined from this index.

ALABAMA

NAS 8-32945 **Alabama A&M University** **1000**
Solution growth of crystals in zero gravity experiment for materials processing in space

Period	*Obligations*	
03/05/78-03/05/83	FY78: $135,000	TOTAL: $135,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lal, R. B.	MSFC/Williams, J. R.	47-Materials Engr
Kroes, R. L.	MSFC/Ruff, R. C.	

NAS 9-14770 **Alabama A&M University** **1001**
Communication system performance evaluation based upon pseudonoise testing

Period	*Obligations*	
10/20/75-06/30/79	FY78: $19,425	TOTAL: $59,425
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Weathers, G. D.	JSC/Teasdale, W. E.	45-Elec Engr

NSG 8001 **Alabama A&M University** **1002**
Application of transition radiations to detect charged particles in cosmic rays

Period	*Obligations*	
01/02/74-04/01/78	FY78:	TOTAL: $16,818
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
George, M. C.	MSFC/Parnell, T. A.	11-Astronomy
	MSFC/Kent, M. I.	

NSG 8033 **Alabama A&M University** **1003**
The study of crystals for space processing and the effects of 0-gravity

Period	*Obligations*	
01/15/76-12/31/78	FY78:	TOTAL: $52,046
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lal, R. B.	MSFC/Schafer, C. F.	13-Physics
	MSFC/Thomas, P. E.	

NSG 8037 **Alabama A&M University** **1004**
Atmospheric effects on coherent laser systems

Period	*Obligations*	
06/01/76-06/01/79	FY78: $28,606	TOTAL: $71,990
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Murty, S. S.	MSFC/Bilbro, J. W.	13-Physics
	MSFC/Kent, M. I.	

NSG 8041 **Alabama A&M University** **1005**
Parametric study of rock pile thermal storage for solar heating

Period	*Obligations*	
06/01/76-09/30/78	FY78:	TOTAL: $62,677
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Saha, H.	MSFC/Humphries, W. R.	46-Mech Engr
	MSFC/ZurBurg, F. R.	

NSG 8042 **Alabama A&M University** **1006**
Preparation of guinea pig macrophages for electrophoretic experiments in space

Period	*Obligations*	
06/01/76-05/31/78	FY78:	TOTAL: $27,235
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Savage, J.	MSFC/Allen, R. E.	51-Biology
Grayson, G.	MSFC/Kent, M. I.	

NSG 8051 **Alabama A&M University** **1007**
Space processing of biological materials

Period	*Obligations*	
06/01/77-08/31/78	FY78:	TOTAL: $25,693
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gibson, W. L.	MSFC/Snyder, R. S.	51-Biology
	MSFC/Kent, M. I.	

NSG 8057 **Alabama A&M University** **1008**
Evaluation of digital system design languages

Period	*Obligations*	
10/01/77-10/15/78	FY78:	TOTAL: $21,990
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Shiva, S. G.	MSFC/Gould, J. M.	45-Elec Engr
	MSFC/Kent, M. I.	

NSG 8062 **Alabama A&M University** **1009**
The application of remote sensing technology to soil mapping and land use problems of Alabama and Southeastern United States

Period	*Obligations*	
05/15/78-05/14/79	FY78: $43,750	TOTAL: $43,750
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Montgomery, O. L.	MSFC/Downs, S. W., Jr.	
	MSFC/Kent, M. I.	39-Env Sci, NEC

NSG 8064 **Alabama A&M University** **1010**
Guinea pig macrophases for electrophoretic experiment

Period	*Obligations*	
09/29/78-04/28/79	FY78: $3,960	TOTAL: $3,960
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Savage, J.	MSFC/Snyder, R. S.	51-Biology

NAS 8-28058 **Athens State College** **1011**
Chemical analysis of outgassing contaminant on spacecraft surfaces

Period	*Obligations*	
10/27/71-12/05/76	FY78:	TOTAL: $93,697
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McNutt, R. C.	MSFC/Fountain, J. A.	13-Physics
	MSFC/Miller, E. R.	

NAS 8-30880 **Athens State College** **1012**
Determination of exploratory loading techniques for holographic non-destructive testing

Period	*Obligations*	
07/01/74-09/30/76	FY78:	TOTAL: $21,102
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Martin, A. M., III	MSFC/Moore, W. W., Jr. MSFC/Owens, R. B.	13-Physics

NAS 8-31731 **Athens State College** **1013**
Vapor transport mechanisms

Period	*Obligations*	
10/08/75-01/07/78	FY78:	TOTAL: $53,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Workman, G. L.	MSFC/Zwiener, J. M. MSFC/Adams, W.	12-Chemistry

NAS 8-32221 **Athens State College** **1014**
Evaluative study of several photopolymer holographic detector materials

Period	*Obligations*	
01/17/77-09/17/77	FY78:	TOTAL: $14,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Workman, G. L.	MSFC/Finnell, S. E. MSFC/Moore, W. W., Jr.	13-Physics

NAS 8-32483 **Athens State College** **1015**
Optical surface damage from reentrant gases on space transportation system

Period	*Obligations*	
05/16/77-07/15/78	FY78:	TOTAL: $16,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McNutt, R. C.	MSFC/Shriver, E. L. MSFC/Linton, R. C.	43-Chem Engr

NAS 8-32834 **Athens State College** **1016**
Study of microprocessors in ultrasonic control functions

Period	*Obligations*	
02/14/78-10/13/78	FY78: $9,900	TOTAL: $9,900
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Workman, G. L.	MSFC/Woodis, K. W. MSFC/Knadler, J. M.	45-Elec Engr

NAS 8-32920 **Athens State College** **1017**
Vapor transport mechanisms

Period	*Obligations*	
02/01/78-08/31/79	FY78: $77,975	TOTAL: $77,975
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Workman, G. L.	MSFC/Zwiener, J. M.	19-Phys Sci, NEC

NAS 8-26930 **Auburn University** **1018**
Advanced computer system studies and development

Period	*Obligations*	
03/29/71-10/15/76	FY78:	TOTAL: $71,225
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Carroll, B. D. Irwin, J. D.	MSFC/White, J. B.	45-Elec Engr

NAS 8-30654 **Auburn University** **1019**
Development of Alabama resources information management system

Period	*Obligations*	
04/23/74-02/28/77	FY78:	TOTAL: $70,934
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Vachon, R. I. Herring, B. E.	MSFC/Cummings, R. E. MSFC/Messer, C.	22-Computer Science

NAS 8-31223 **Auburn University** **1020**
Optical data processing study

Period	*Obligations*	
02/04/75-10/04/76	FY78:	TOTAL: $13,984
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Pinson, L. J.	MSFC/Keer, J. H. MSFC/Smith, H. F.	45-Elec Engr

NAS 8-31572 **Auburn University** **1021**
Design, processing and test of large scale integrated circuit arrays

Period	*Obligations*	
12/01/75-07/14/79	FY78: $29,599	TOTAL: $70,790
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Carroll, B. D.	MSFC/Matheney, J. L. MSFC/Cagle, F. A.	45-Elec Engr

NAS 8-32215 **Auburn University** **1022**
Development of Alabama resources information management system

Period	*Obligations*	
12/20/76-12/15/78	FY78:	TOTAL: $20,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Vachon, R. I. Herring, B. E.	MSFC/Huffman, J. D. MSFC/Paludan, C. T.	39-Env Sci, NEC

NAS 8-32633 **Auburn University** **1023**
The large scale integrated circuits cost optimizing

Period	*Obligations*	
09/06/77-11/05/78	FY78:	TOTAL: $29,400
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cook, K. B. Kerns, D. V.	MSFC/Routh, D. E. MSFC/Hollis, B. R., Jr.	49-Engr, NEC

NAS 8-32634 **Auburn University** **1024**
The large scale integrated circuits process technology

Period	*Obligations*	
09/06/77-09/05/78	FY78:	TOTAL: $29,400
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kerns, D. V. Cook, K. B.	MSFC/Routh, D. E. MSFC/Feltner, W. R.	49-Engr, NEC

NAS 8-33092 **Auburn University** **1025**
Developing and characterizing improved radiation hard technology for space applications (CMOS)

Period	*Obligations*	
11/06/78-11/05/79	FY78: $30,000	TOTAL: $30,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kerns, D. V.	MSFC/Routh, D. E.	45-Elec Engr
Cook, K. B.	MSFC/Gould, J. M.	

NCA 8-125 **Auburn University** **1026**
Research and study of solid propellant rocket motor internal ballistic performance variation

Period	*Obligations*	
11/19/76-11/18/77	FY78:	TOTAL: $36,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sforzini, R. H.	MSFC/Shackelford, B. W., Jr.	43-Chem Engr

NCA 8-128 **Auburn University** **1027**
Evaluation of induction motors with electronic controls

Period	*Obligations*	
08/03/77-01/02/77	FY78:	TOTAL: $7,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Russell, D.	MSFC/Nola, F. J.	43-Chem Engr
Lowrey, W.		

NCA 8-130 **Auburn University** **1028**
Solid propellant rocket motor internal ballistic performance variation analysis

Period	*Obligations*	
12/14/77-01/13/79	FY78: $25,000	TOTAL: $25,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sforzini, R. H.	MSFC/Shackelford, B. W., Jr.	
Foster, W. A., Jr.	MSFC/Miller, J. Q.	41-Aero Engr

NSG 3109 **Auburn University** **1029**
Techniques for determining stresses in rotating turbine or compressor blades

Period	*Obligations*	
09/01/76-12/30/77	FY78:	TOTAL: $38,842
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ranson, W. F.	LERC/Decker, A. J.	49-Engr, NEC
Swinson, W. F.		

NSG 8047 **Auburn University** **1030**
Grain quality inspection system: Phase I feasibility evaluation

Period	*Obligations*	
01/24/77-04/30/79	FY78: $48,000	TOTAL: $74,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Flood, C. A., Jr.	MSFC/Daniel, C. C.	49-Engr, NEC

NGR 01-007-009 **Talladega College** **1031**
Far infrared lattice properties of gallium arsenide

Period	*Obligations*	
01/01/74-03/14/78	FY78:	TOTAL: $80,450
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Breecher, J.	MSFC/Dalins, I.	13-Physics

NSG 2217 **Talladega College** **1032**
Experimental Research on the thermodynamic properties of sulfuric acid

Period	*Obligations*	
05/01/77-04/30/79	FY78: $35,000	TOTAL: $59,973
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Morrison, R. A.	ARC/Whitten, R. C.	13-Physics
	ARC/Toon, O. B.	

NAS 9-13844 **Tuskegee Institute** **1033**
Analytical investigation of the heat-pipe radiator as a spacecraft heat rejection system

Period	*Obligations*	
01/01/74-12/31/79	FY78: $10,000	TOTAL: $85,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sellers, J. P., Jr.	JSC/French, B. O.	46-Mech Engr

NGT 01-005-750 **Tuskegee Institute** **1034**
Training of undergraduate students in sciences and engineering

Period	*Obligations*	
06/01/75-05/31/79	FY78: $14,000	TOTAL: $56,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Dybczak, Z. W.	HQ-LU/Pohly, J. G.	49-Engr, NEC
	HQ-U/Jenkins, H. G.	

NGT 01-005-780 **Tuskegee Institute** **1035**
Pre-cooperative engineering education program

Period	*Obligations*	
10/01/78-09/30/79	FY78: $6,200	TOTAL: $6,200
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sams, U. H.	HQ-LU/Pohly, J. G.	49-Engr, NEC
	LERC/Allen, R. P.	

NSG 2330 **Tuskegee Institute** **1036**
Morphometrics of cellular damage in mice receiving whole body irradiation

Period	*Obligations*	
08/01/78-07/31/79	FY78: $20,000	TOTAL: $20,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sapp, W. J.	ARC/Philpott, D. E.	51-Biology

NSG 3154 **Tuskegee Institute** **1037**
Evaporation behavior of superalloys

Period	*Obligations*	
08/01/77-07/03/79	FY78: $25,000	TOTAL: $65,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ramirez, R. P.	LERC/Titran, R. H.	47-Materials Engr
Jeelani, S.	LERC/Klopp, W. D.	

NSG 8038 **Tuskegee Institute** **1038**
Investigation of electrical breakdown characteristics and stability of insulating materials used on solar cells (photovoltaic converters)

Period	*Obligations*	
08/01/76-07/31/79	FY78:	TOTAL: $49,042
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Doreswamy, C. V.	MSFC/Young, L. E.	45-Elec Engr
	MSFC/Kent, M. I.	

NSG 8054 **Tuskegee Institute** **1039**
An investigation of absorber and radiators for solar power systems

Period 09/01/77-11/30/78
Obligations FY78: TOTAL: $25,000
Prin. Invest. Sellers, J. P., Jr.
NASA Tech. Officer MSFC/Brantley, L. W.; MSFC/Kent, M. I.
CASE Category 46-Mech Engr

NAS 8-32923 **University of Alabama - Birmingham** **1040**
Conducting experiments to determine the operating limitations of the Hanning continuous flow electrophoretic separator

Period 06/07/78-12/06/78
Obligations FY78: $20,000 TOTAL: $20,000
Prin. Invest. Sachs, G.; Jackson, R. D.; Stewart, H. B.
NASA Tech. Officer MSFC/Rhodes, P. H.; MSFC/Snyder, R. S.
CASE Category 51-Biology

NAS 8-33014 **University of Alabama - Birmingham** **1041**
Materials processing in space experiment: Whole cell electrophoresis aboard Spacelab

Period 05/17/78-05/17/79
Obligations FY78: $40,000 TOTAL: $40,000
Prin. Invest. Chiovetti, R., Jr.
NASA Tech. Officer MSFC/Snyder, R. S.
CASE Category 51-Biology

NGR 01-010-001 **University of Alabama - Birmingham** **1042**
Model for origin and coevolution of genetic code and the process of protein synthesis

Period 05/09/73-05/31/79
Obligations FY78: $35,834 TOTAL: $210,780
Prin. Invest. Lacey, J. C., Jr.
NASA Tech. Officer HQ-SB/Young, R. S.
CASE Category 12-Chemistry

NAS 8-24908 **University of Alabama - Huntsville** **1043**
Study of radiation environment in orbit of the Apollo applications satellites

Period 06/24/69-01/31/77
Obligations FY78: $49 TOTAL: $195,327
Prin. Invest. Hiser, H. W.
NASA Tech. Officer MSFC/Parnell, T. A.
CASE Category 11-Astronomy

NAS 8-24953 **University of Alabama - Huntsville** **1044**
Study of specific light output of CSi crystals

Period 06/26/69-12/31/76
Obligations FY78: $218 TOTAL: $374,070
Prin. Invest. Gregory, J. C.
NASA Tech. Officer MSFC/Parnell, T. A.; MSFC/Fishman, G. J.
CASE Category 13-Physics

NAS 8-28097 **University of Alabama - Huntsville** **1045**
Triggering mechanisms for solar flares

Period 12/06/71-12/31/78
Obligations FY78: $39,198 TOTAL: $499,198
Prin. Invest. Wu, S. T.
NASA Tech. Officer MSFC/Tandberghanssen, E.; MSFC/Watkins, J. R.
CASE Category 13-Physics

NAS 8-29316 **University of Alabama - Huntsville** **1046**
Working model of the London moment readout system

Period 10/06/72-02/22/79
Obligations FY78: $85,323 TOTAL: $516,699
Prin. Invest. Hendricks, J. B.
NASA Tech. Officer MSFC/Decher, R.; MSFC/Urban, E. W.
CASE Category 99-Multi-Discip

NAS 8-30563 **University of Alabama - Huntsville** **1047**
Study of magnetospheric and laboratory plasma physics experiments

Period 09/01/74-03/31/79
Obligations FY78: $85,573 TOTAL: $234,669
Prin. Invest. Comfort, R. H.
NASA Tech. Officer MSFC/Chappell, C. R.; MSFC/Fields, S. A.
CASE Category 13-Physics

NAS 8-31170 **University of Alabama - Huntsville** **1048**
Study of efficient low power diffractometer designs

Period 01/15/75-12/31/78
Obligations FY78: $35,000 TOTAL: $103,391
Prin. Invest. Gregory, J. C.
NASA Tech. Officer MSFC/Parnell, T. A.; MSFC/Eby, P. B.
CASE Category 13-Physics

NAS 8-31171 **University of Alabama - Huntsville** **1049**
Study of internal wave motions on the neutral atmosphere

Period 02/14/75-12/31/78
Obligations FY78: $48,000 TOTAL: $88,000
Prin. Invest. Hung, R. J.
NASA Tech. Officer MSFC/West, G. S., Jr.; MSFC/Hill, C. K.
CASE Category 39-Env Sci, NEC

NAS 8-31293 **University of Alabama - Huntsville** **1050**
Solar heating and cooling technical data and systems analysis

Period 11/07/74-05/31/79
Obligations FY78: $50,000 TOTAL: $531,521
Prin. Invest. Christiensen, D.
NASA Tech. Officer MSFC/Crider, B.; MSFC/King, C.
CASE Category 13-Physics

NAS 8-31321 **University of Alabama - Huntsville** **1051**
Cloud physics laboratory project science and applications working group

Period 12/20/74-11/30/77
Obligations FY78: TOTAL: $89,000
Prin. Invest. Hung, R. J.
NASA Tech. Officer MSFC/Smith, R. E.; MSFC/Vaughan, O. H.
CASE-Category 31-Atmos Sci

NAS 8-31345 **University of Alabama - Huntsville** **1052**
Water resources and stream contamination study

Period	*Obligations*	
04/01/75-10/01/77	FY78:	TOTAL: $7,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Doyle, L.	MSFC/Bensko, J.	32-Geological Sci

NAS 8-31729 **University of Alabama - Huntsville** **1053**
Numerical simulation of warm fogs

Period	*Obligations*	
11/05/75-03/31/79	FY78: $25,000	TOTAL: $49,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hung, R. J.	MSFC/Vaughn, O. H., Jr.	13-Physics
	MSFC/Anderson, B. J.	

NAS 8-31895 **University of Alabama - Huntsville** **1054**
Investigations in cosmic ray and gamma ray astronomy and nuclear instruments

Period	*Obligations*	
03/19/76-03/31/79	FY78: $62,500	TOTAL: $132,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gregory, J. C.	MSFC/Parnell, T. A.	13-Physics

NAS 8-32225 **University of Alabama - Huntsville** **1055**
Shuttle Comet research

Period	*Obligations*	
09/30/76-01/29/77	FY78:	TOTAL: $7,582
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Stuhlinger, E.	MSFC/Clifton, K. S.	11-Astronomy

NAS 8-32398 **University of Alabama - Huntsville** **1056**
Measurements of materials properties for solar cells

Period	*Obligations*	
02/07/77-03/06/78	FY78:	TOTAL: $26,014
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Castle, J. G.	MSFC/Whitaker, A. F.	13-Physics
	MSFC/Peacock, C.	

NAS 8-32608 **University of Alabama - Huntsville** **1057**
Research Study: Data Management symposium

Period	*Obligations*	
07/15/77-03/14/78	FY78:	TOTAL: $23,885
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Carter, E. A.	MSFC/Carey, W. T., Jr.	45-Elec Engr
	MSFC/Hudson, K.	

NAS 8-32818 **University of Alabama - Huntsville** **1058**
Infrared telescope cryogenic system design and development

Period	*Obligations*	
03/31/78-02/14/79	FY78: $64,822	TOTAL: $64,822
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Karr, G. R.	MSFC/Urban, E. W.	13-Physics
	MSFC/Katz, L.	

NAS 8-33096 **University of Alabama - Huntsville** **1059**
Design automation of digital systems

Period	*Obligations*	
08/09/78-09/30/79	FY78: $26,287	TOTAL: $26,287
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Shiva, S. G.	MSFC/Jones, R. E.	22-Computer Science

NAS 8-33132 **University of Alabama - Huntsville** **1060**
Orbiting space science platform

Period	*Obligations*	
06/01/78-04/30/79	FY78: $20,000	TOTAL: $20,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wu, S. T.	MSFC/Morgan, S. H.	19-Phys Sci, NEC
	MSFC/Snoddy, W. C.	

NGT 01-008-021 **University of Alabama - Huntsville** **1061**
Summer faculty fellowship program

Period	*Obligations*	
01/01/76-03/31/78	FY78:	TOTAL: $202,590
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Head, R. R.	HQ-LU/Carter, C. H.	49-Engr, NEC

NSG 2058 **University of Alabama - Huntsville** **1062**
Development of an isolation research model and paradigm

Period	*Obligations*	
12/15/74-01/31/79	FY78:	TOTAL: $154,370
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rogers, J. G.	ARC/Tanner, T. A., Jr.	69-Psych, NEC
Sullins, W. R., Jr.		

NAS 8-29100 **University of Alabama - University** **1063**
Water resources planning for rivers draining into Mobile Bay

Period	*Obligations*	
07/01/73-12/31/76	FY78:	TOTAL: $64,833
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
April, G. C.	MSFC/Morton, R. R.	49-Engr, NEC
Hill, D. O.	MSFC/Paludan, C. T.	

NAS 8-29937 **University of Alabama - University** **1064**
Use of remote sensing techniques for geological hazard surveys in vegetated urban regions

Period	*Obligations*	
06/08/73-12/31/76	FY78:	TOTAL: $48,163
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Stow, S. H.	MSFC/Bensko, J.	32-Geological Sci

NAS 8-32386 **University of Alabama - University** **1065**
Composite mobile holographic non-destructive test system analysis

Period	*Obligations*	
01/10/77-08/09/78	FY78:	TOTAL: $25,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lin, H. K.	MSFC/Owen, R. B.	13-Physics
	MSFC/Moore, W. W., Jr.	

ALABAMA (Continued)

NAS 8-32481 **University of Alabama - University** **1066**
Development of surfaces optically suitable for flat solar panels

Period	*Obligations*	
05/16/77-04/15/78	FY78:	TOTAL: $28,725
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Desmedt, D.	MSFC/Linton, R. C. MSFC/Miller, E. R.	12-Chemistry

NGT 01-002-080 **University of Alabama - University** **1067**
Summer faculty fellowship program

Period	*Obligations*	
01/14/71-12/31/76	FY78:	TOTAL: $313,359
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Barfield, B. F.	HQ-LU/Carter, C. H.	49-Engr, NEC

NGT 01-002-095 **University of Alabama - University** **1068**
Summer faculty fellowship program in engineering systems design

Period	*Obligations*	
01/01/77-03/31/78	FY78:	TOTAL: $106,022
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lueg, R. E.	HQ-LU/Carter, C. H.	49-Engr, NEC

NGT 01-002-099 **University of Alabama - University** **1069**
Summer faculty fellowship program in research

Period	*Obligations*	
01/01/78-03/31/79	FY78: $148,574	TOTAL: $148,574
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Barfield, B. F.	HQ-LU/Carter, C. H.	49-Engr, NEC

ALASKA

NAS 5-25327 **University of Alaska - Fairbanks** **1070**
Photographic support of chemically active material ejected in orbit

Period	*Obligations*	
09/18/78-12/10/78	FY78: $18,968	TOTAL: $18,968
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Brown, N. B.	GSFC/Heppner, J. P. GSFC/Miller, M. L.	13-Physics

NGL 02-001-092 **University of Alaska - Fairbanks** **1071**
Application of remote sensing data to surveys of the Alaskan environment

Period	*Obligations*	
07/26/72-03/31/81	FY78: $150,000	TOTAL: $825,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Miller, J. M.	HQ-ET/Vitale, J. A.	39-Env Sci, NEC

NSG 5219 **University of Alaska - Fairbanks** **1072**
Auroral spectroscopy using atmosphere Explorer observations

Period	*Obligations*	
10/01/77-03/31/79	FY78: $23,000	TOTAL: $23,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rees, M. H.	GSFC/Spencer, N. W.	13-Physics

NSG 6014 **University of Alaska - Fairbanks** **1073**
Active experiments using rocket-borne shaped charge barium releases

Period	*Obligations*	
01/01/76-12/31/79	FY78: $110,000	TOTAL: $399,361
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Davis, T. N. Wescott, E. M.	WFC/Gray, J. W. WFC/Pless, R. H.	19-Phys Sci, NEC

NSG 7281 **University of Alaska - Fairbanks** **1074**
A study of the relationship of the ring current and magnetospheric substorms

Period	*Obligations*	
10/01/76-09/30/77	FY78:	TOTAL: $25,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Akasofu, S. I.	HQ-ST/Taylor, W. W. HQ-ST/Schmerling, E. R.	39-Env Sci, NEC

NSG 7447 **University of Alaska - Fairbanks** **1075**
Relationship between the ring current and magnetospheric substorms

Period	*Obligations*	
06/01/78-05/31/79	FY78: $30,000	TOTAL: $30,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Akasofu, S. I.	HQ-ST/King, J. H.	31-Atmos Sci

ARIZONA

DEN 3 50 **Arizona State University** **1076**
Social and economic impact study of photovoltaic power

Period	*Obligations*	
07/10/78-11/09/79	FY78: $16,190	TOTAL: $16,190
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bahr, D. M. Merbs, C. F.	LERC/Bifano, W. J.	72-Economics

NAS 1-15168 **Arizona State University** **1077**
Viking guest investigator program

Period	*Obligations*	
12/13/77-09/30/79	FY78: $25,722	TOTAL: $25,722
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Greeley, R.	LARC/Spence, D. C.	31-Atmos Sci

NAS 8-32230 **Arizona State University** **1078**
Marshall mated element system translator

Period	*Obligations*	
12/15/76-11/13/78	FY78: $18,217	TOTAL: $118,217
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Woodfin, M. A.	MSFC/Lee, G. MSFC/Smith, J. G.	21-Mathematics

NAS 8-32357 **Arizona State University** **1079**
Building and obstacle wakes
Period *Obligations*
02/11/77-01/14/79 FY78: $24,872 TOTAL: $54,872
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Logan, E., Jr. MSFC/Camp, D. W. 31-Atmos Sci
MSFC/Alexander, M.

NAS 8-32937 **Arizona State University** **1080**
The effect of a dispersed second phase on the ionic conductivity of solid state electrolytes
Period *Obligations*
12/13/77-12/13/82 FY78: $136,500 TOTAL: $136,500
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Wagner, J. B. MSFC/Williams, J. R. 47-Materials Engr
MSFC/Naumann, R. J.

NCA 2-35702 **Arizona State University** **1081**
Investigation of the synthesis of optically active polymers
Period *Obligations*
01/01/77-12/31/78 FY78: TOTAL: $8,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Yuen, G. U. ARC/Pollock, G. E. 12-Chemistry
Munk, S.

NCA 2-35801 **Arizona State University** **1082**
Erosion of basalt minerals and rocks under simulated Martian aeolian conditions
Period *Obligations*
07/01/78-06/30/79 FY78: $16,720 TOTAL: $16,720
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Krinsley, D. ARC/Pollack, J. B. 32-Geological Sci
Greeley, R.

NCA 2-35802 **Arizona State University** **1083**
Joint development of a planetary geology curriculum guide
Period *Obligations*
08/01/78-07/31/79 FY78: $12,210 TOTAL: $12,210
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Greeley, R. ARC/Black, D. C. 32-Geological Sci

NGL 03-001-001 **Arizona State University** **1084**
Development of improved procedures for sampling, characterizing & classifying meteorite specimens
Period *Obligations*
04/16/63-02/28/80 FY78: TOTAL: $330,423
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Moore, C. B. HQ-SL/French, B. M. 32-Geological Sci
HQ-SL/Quaide, W. L.

NSG 2284 **Arizona State University** **1085**
Aeolian geology studies
Period *Obligations*
12/01/77-11/30/78 FY78: $33,250 TOTAL: $33,250
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Greeley, R. ARC/Black, D. C. 19-Phys Sci, NEC
ARC/Summers, A. L.

NSG 3075 **Arizona State University** **1086**
Study of multiple jet array impingement heat transfer characteristics
Period *Obligations*
09/01/75-05/31/79 FY78: $75,000 TOTAL: $223,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Metzger, D. E. LERC/Hippensteele, S. A. 41-Aero Engr
Florschuetz, L. W.

NSG 7019 **Arizona State University** **1087**
Work function evaluation of iron-nickel alloys and other metals for low temperature thermionic energy converters
Period *Obligations*
01/01/74-12/31/77 FY78: TOTAL: $68,650
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Jacobson, D. L. LERC/Morris, J. F. 13-Physics

NSG 7040 **Arizona State University** **1088**
The origin and early evolution of the solar system
Period *Obligations*
04/01/74-02/28/79 FY78: $41,798 TOTAL: $189,967
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Larimer, J. W. HQ-SL/French, B. M. 32-Geological Sci
HQ-SL/Quaide, W. L.

NSG 7255 **Arizona State University** **1089**
The nature and origin of organic compounds in carbonaceous meteorites
Period *Obligations*
06/14/76-01/31/79 FY78: $45,000 TOTAL: $102,375
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Cronin, J. R. HQ-SB/Young, R. S. 32-Geological Sci
Yuen, G. U.

NSG 7415 **Arizona State University** **1090**
Geological studies in planetology
Period *Obligations*
12/01/77-11/31/78 FY78: $72,835 TOTAL: $72,835
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Greeley, R. HQ-SL/Dwornik, S. E. 32-Geological Sci
HQ-SL/Boyce, J. M.

NSG 7429 **Arizona State University** **1091**
Analysis of lunar mare emplacement and impact cratering experiments
Period *Obligations*
02/01/78-01/31/79 FY78: $33,332 TOTAL: $33,332
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Greeley, R. HQ-SL/Quaide, W. L. 32-Geological Sci
HQ-SL/French, B. E.

NSG 9068 **Arizona State University** **1092**
High resolution transmission electron microscopy of lunar pyroxenes
Period *Obligations*
04/01/78-03/31/79 FY78: $25,719 TOTAL: $25,719
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Buseck, P. R. JSC/Harris, J. W. 32-Geological Sci

NAS 1-14332 **University of Arizona** **1093**
Stratospheric aerosol measurement experiment
Period *Obligations*
03/19/76-09/30/79 FY78: $30,000 TOTAL: $62,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Herman, B. M. LARC/McCormick, M. P. 31-Atmos Sci
LARC/McMaster, L. R.

NAS 1-14928 **University of Arizona** **1094**
Stratospheric aerosol and gas experiment
Period *Obligations*
07/21/77-09/30/79 FY78: $20,000 TOTAL: $35,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Herman, B. M. LARC/McMaster, L. R. 31-Atmos Sci
LARC/McCormick, M. P.

NAS 2-6265 **University of Arizona** **1095**
IPP software & display system
Period *Obligations*
11/01/70-01/31/79 FY78: $153,500 TOTAL: $1,595,069
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Gehrels, A. M. ARC/Hall, C. F. 11-Astronomy
ARC/Porter, D. L.

NAS 2-9486 **University of Arizona** **1096**
Pioneer/Venus data analysis of the solar flux radiometer experiment
Period *Obligations*
05/27/77-09/30/78 FY78: $82,059 TOTAL: $142,059
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Tomasko, M. G. ARC/Hall, C. F. 11-Astronomy

NAS 2-9487 **University of Arizona** **1097**
Pioneer/Venus data analysis
Period *Obligations*
01/06/78-09/30/79 FY78: $31,795 TOTAL: $31,795
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Hunten, D. M. ARC/Hall, C. F. 31-Atmos Sci
ARC/Porter, D. L.

NAS 5-24308 **University of Arizona** **1098**
Study of suitability of starlab for solar system studies
Period *Obligations*
09/27/77-09/26/78 FY78: TOTAL: $16,177
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Smith, B. A. GSFC/Wilson, L. 11-Astronomy
GSFC/Stecher, T. P.

NAS 8-29566 **University of Arizona** **1099**
Role of gravity in preparative electrophoresis
Period *Obligations*
02/01/73-06/30/78 FY78: TOTAL: $374,884
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bier, M. MSFC/Allen, R. E. 13-Physics
MSFC/Snyder, R. S.

NAS 8-31192 **University of Arizona** **1100**
Maintenance and operation of the 60' NASA telescope at Mt Lemmon
Period *Obligations*
10/01/74-12/31/78 FY78: $86,660 TOTAL: $278,552
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Sonett, C. P. MSFC/Parnell, T. A. 11-Astronomy

NAS 8-31196 **University of Arizona** **1101**
Replacement of optics for the NASA 1.5 meter telescope
Period *Obligations*
10/18/74-01/31/77 FY78: TOTAL: $72,963
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Sonett, C. P. MSFC/Miller, E. R. 11-Astronomy
MSFC/Lundquist, C. A.

NAS 8-31948 **University of Arizona** **1102**
Automated analytical electrophoresis apparatus
Period *Obligations*
05/17/76-12/31/78 FY78: $69,620 TOTAL: $234,620
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bartels, P. H. MSFC/Snyder, R. S. 51-Biology
Bier, N. MSFC/Nerren, B. H.

NAS 8-32127 **University of Arizona** **1103**
Study of stray light suppression for the large space telescope
Period *Obligations*
08/17/76-08/16/78 FY78: TOTAL: $40,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Slater, P. N. MSFC/Griner, D. B. 11-Astronomy
MSFC/Johnson, D. D.

NAS 8-32950 **University of Arizona** **1104**
Hormone purification by isoelectric focusing in space
Period *Obligations*
03/29/78-03/29/80 FY78: $75,000 TOTAL: $75,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bier, M. MSFC/Williams, J. R. 51-Biology
Barstow, L. E. MSFC/Snyder, R. S.
Jewett, W. R.

NAS 9-14692 **University of Arizona** **1105**
Automated computerized pattern recognition in cytology
Period *Obligations*
06/01/75-12/31/77 FY78: TOTAL: $50,439
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bartels, P. H. JSC/Kimsey, S. L. 59-Life Sci, NEC

NASW 2944 **University of Arizona** **1106**
Establish and operate a space imagery center
Period *Obligations*
06/15/76-09/15/77 FY78: TOTAL: $26,326
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Strom, R. G. HQ-SL/Dwornik, S. E. 11-Astronomy

ARIZONA (Continued)

NAS10-8518 **University of Arizona** **1107**
Thunderstorm electrical field changes and associated meteorological conditions at KSC

Period	*Obligations*	
02/12/74-01/14/79	FY78: $25,000	TOTAL: $141,600
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Krider, E. P.	KSC/Jafferis, W.	31-Atmos Sci

NCA 5-93 **University of Arizona** **1108**
Spectroscopic observations of comets

Period	*Obligations*	
09/06/78-07/01/79	FY78: $3,000	TOTAL: $3,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Martineck, S.	GSFC/Donn, B. D.	31-Atmos Sci

NGL 03-002-002 **University of Arizona** **1109**
Planetary, spectroscopic, selenodetic & physical studies of lunar surface

Period	*Obligations*	
08/12/61-05/31/81	FY78: $77,505	TOTAL: $2,741,272
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Smith, B. A.	HQ-SL/Brunk, W. E. HQ-SL/Murphy, R. E.	11-Astronomy

NGL 03-002-017 **University of Arizona** **1110**
Operation of MV van de Graaff accelerator for basic experiments in atomic optical spectroscopy

Period	*Obligations*	
05/21/64-10/31/77	FY78:	TOTAL: $1,005,061
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bashkin, S.	HQ-SC/Roman, N. G.	11-Astronomy

NGL 03-002-019 **University of Arizona** **1111**
High resolution electron microscopic techniques to study biological material

Period	*Obligations*	
06/07/63-08/31/79	FY78:	TOTAL: $471,055
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hoenig, S. A.	HQ-SL/Fellows, R. F. HQ-SL/Brunk, W. E.	31-Atmos Sci

NGL 03-002-081 **University of Arizona** **1112**
Photometry and polarimetry of minor planets

Period	*Obligations*	
03/14/66-09/30/78	FY78:	TOTAL: $429,236
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gehrels, T.	HQ-SL/Brunk, W. E. HQ-SL/Quaide, W. L.	11-Astronomy

NGL 03-002-122 **University of Arizona** **1113**
Astrometric and astrophysical investigation of comets, minor planets, and satellites

Period	*Obligations*	
02/22/67-04/30/79	FY78:	TOTAL: $214,295
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cox, E. L.	HQ-SL/Brunk, W. E. HQ-SL/Fellows, R. F.	11-Astronomy

NGL 03-002-191 **University of Arizona** **1114**
Lunar surface and planetology study

Period	*Obligations*	
05/16/69-03/31/79	FY78: $38,487	TOTAL: $568,770
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Strom, R. G.	HQ-SL/Williams, R. J. HQ-SL/Flinn, E. A.	32-Geological Sci

NGL 03-002-313 **University of Arizona** **1115**
Remote sensing applications for state & local government

Period	*Obligations*	
03/07/72-02/28/81	FY78: $100,000	TOTAL: $700,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Johnson, J. D.	HQ-ET/Vitale, J. A.	39-Env Sci, NEC

NGR 03-002-107 **University of Arizona** **1116**
Basic research in astrophysics and space science

Period	*Obligations*	
09/01/67-08/31/79	FY78: $58,526	TOTAL: $638,063
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hsieh, K. C.	HQ-ST/Kaiser, M. L. HQ-ST/Schmerling, E. R.	13-Physics

NGR 03-002-171 **University of Arizona** **1117**
Analysis of carbonaceous meteorites

Period	*Obligations*	
10/26/68-09/30/78	FY78: $45,000	TOTAL: $527,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Nagy, B. Nagy, L. A.	HQ-SB/Young, R. S.	32-Geological Sci

NGR 03-002-219 **University of Arizona** **1118**
Photopolarimetry of Mercury, Mars, and satellites

Period	*Obligations*	
02/13/70-10/31/78	FY78: $35,055	TOTAL: $314,422
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gehrels, A. M.	HQ-SL/Brunk, W. E. HQ-SL/Quaide, W. L.	11-Astronomy

NGR 03-002-269 **University of Arizona** **1119**
Operation of a 30 cm flying infrared telescope

Period	*Obligations*	
05/04/71-05/31/78	FY78: $70,507	TOTAL: $497,676
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Low, F. J.	HQ-SC/Boggess, N. W. HQ-SC/Roman, N. G.	11-Astronomy

NGR 03-002-332 **University of Arizona** **1120**
Infrared spectroscopy of the planets from 1-5.6 micron with the medium-resolution LPL Fourier interferometer

Period	*Obligations*	
03/05/73-10/31/78	FY78: $107,961	TOTAL: $414,439
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Harper, H. P.	ARC/Gillespie, C. M., Jr. ARC/Cameron, R. M.	11-Astronomy

NGR 03-002-370 **University of Arizona** **1121**
An investigation of electromagnetic processes in the early solar system with bearing on thermal evolution and fossil magnetism

Period	*Obligations*	
10/01/73-12/31/78	FY78: $37,733	TOTAL: $193,130
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sonett, C. P.	HQ-SL/Dwornik, S. E.	32-Geological Sci
	HQ-SL/Boyce, J. M.	

NGR 03-002-371 **University of Arizona** **1122**
Far infrared observations of galactic and extra-galactic sources of radiation

Period	*Obligations*	
09/01/73-11/30/78	FY78: $70,000	TOTAL: $270,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hoffman, W. F.	HQ-SC/Boggess, N. W.	11-Astronomy
	HQ-SC/Roman, N. G.	

NGR 03-002-388 **University of Arizona** **1123**
Lunar sample analysis

Period	*Obligations*	
02/01/74-01/31/79	FY78: $76,000	TOTAL: $260,700
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Drake, M. J.	JSC/Harris, J. W.	12-Chemistry

NGR 03-002-390 **University of Arizona** **1124**
Mapping structure of galactic center

Period	*Obligations*	
10/01/73-10/31/78	FY78: $12,000	TOTAL: $206,733
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hoffman, W. F.	ARC/Haughney, L. C.	11-Astronomy
Harvey, P.		

NSG 2112 **University of Arizona** **1125**
Inviscid transonic flow computations

Period	*Obligations*	
11/01/75-10/31/78	FY78: $59,962	TOTAL: $160,785
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Seebass, A. R.	ARC/Ballhaus, W. F.	41-Aero Engr

NSG 2205 **University of Arizona** **1126**
Construction of a radial velocity meter for determining percentage of binaries among solar-type stars

Period	*Obligations*	
01/01/77-12/31/78	FY78:	TOTAL: $15,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Serkowski, K. M.	ARC/Billingham, J.	11-Astronomy

NSG 2309 **University of Arizona** **1127**
Studies of potential biological components of closed life support systems applicable to large space habitats

Period	*Obligations*	
04/01/78-12/01/78	FY78: $45,168	TOTAL: $45,168
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Phillips, J. M.	ARC/Quattrone, P. D.	59-Life Sci, NEC
	ARC/Johnson, R. D.	

NSG 5022 **University of Arizona** **1128**
Investigation of the basic foundation of masers and lasers

Period	*Obligations*	
09/01/74-03/15/78	FY78:	TOTAL: $69,881
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lamb, W. E., Jr.	GSFC/McAvoy, N.	13-Physics
	GSFC/McElroy, J. H.	

NSG 5023 **University of Arizona** **1129**
Lightning detection study

Period	*Obligations*	
09/01/74-03/31/80	FY78: $11,500	TOTAL: $51,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Krider, E. P.	GSFC/LeVine, D. M.	31-Atmos Sci

NSG 5235 **University of Arizona** **1130**
Research of the ultraviolet spectra of t Tauri and related stars

Period	*Obligations*	
02/19/78-02/18/79	FY78: $2,232	TOTAL: $2,232
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Imhoff, C. L.	GSFC/Boggess, A.	11-Astronomy
	GSFC/West, D. K.	

NSG 5249 **University of Arizona** **1131**
Spectrophotometry of planets, satellites and asteroids

Period	*Obligations*	
03/01/78-02/28/79	FY78: $15,000	TOTAL: $15,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Tomasko, M. G.	GSFC/Boggess, A.	11-Astronomy
	GSFC/West, D. K.	

NSG 5279 **University of Arizona** **1132**
Measurement and forecasting of soil moisture by remote means

Period	*Obligations*	
07/01/78-01/31/79	FY78: $6,600	TOTAL: $6,600
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Evans, D. D.	GSFC/Schmugge, T. J.	31-Atmos Sci

NSG 5302 **University of Arizona** **1133**
Laser application of incoherent radiation

Period	*Obligations*	
09/15/78-09/14/79	FY78: $5,000	TOTAL: $5,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lamb, W. E., Jr.	GSFC/McAvoy, N.	13-Physics

NSG 7011 **University of Arizona** **1134**
Radiation history of meteorites

Period	*Obligations*	
03/01/74-02/28/79	FY78: $46,122	TOTAL: $173,816
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wilkening, L. L.	HQ-SL/French, B. M.	32-Geological Sci
	HQ-SL/Quaide, W. L.	

NSG 7020 **University of Arizona** **1135**
Investigation of lunar induced and permanent magnetism in the lunar data analysis and synthesis program

Period 03/01/74-01/31/79
Obligations FY78: $138,952 TOTAL: $503,316
Prin. Invest. Sonett, C. P.
NASA Tech. Officer HQ-SL/Quaide, W. L.; HQ-SL/French, B. E.
CASE Category 32-Geological Sci

NSG 7024 **University of Arizona** **1136**
Study of the earth's magnetosphere and solar wind

Period 02/01/74-10/31/78
Obligations FY78: $45,000 TOTAL: $230,000
Prin. Invest. Sonett, C. P.
NASA Tech. Officer HQ-ST/Taylor, W. W.; HQ-ST/Schmerling, E. R.
CASE Category 13-Physics

NSG 7045 **University of Arizona** **1137**
Interiors of the giant planets

Period 05/22/74-03/31/79
Obligations FY78: $42,894 TOTAL: $165,894
Prin. Invest. Hubbard, W. B.
NASA Tech. Officer HQ-SL/Brunk, W. E.; HQ-SL/Murphy, R. E.
CASE Category 11-Astronomy

NSG 7070 **University of Arizona** **1138**
Planetary spectroscopy

Period 06/01/74-05/31/81
Obligations FY78: $97,817 TOTAL: $495,949
Prin. Invest. Fink, U. W.
NASA Tech. Officer HQ-SL/Brunk, W. E.; HQ-SL/Murphy, R. E.
CASE Category 11-Astronomy

NSG 7101 **University of Arizona** **1139**
Study structure of astrophysical plasma and turbulent fluctuations

Period 11/18/74-08/31/78
Obligations FY78: TOTAL: $167,866
Prin. Invest. Jokippi, J.
NASA Tech. Officer HQ-SC/Opp, A. G.
CASE Category 11-Astronomy

NSG 7114 **University of Arizona** **1140**
Infrared observations of the planets

Period 02/20/75-05/31/79
Obligations FY78: $24,145 TOTAL: $70,742
Prin. Invest. Rieke, G. H.
NASA Tech. Officer HQ-SL/Brunk, W. E.; HQ-SL/Murphy, R. E.
CASE Category 11-Astronomy

NSG 7142 **University of Arizona** **1141**
Evaluation of a large format image tube camera/film transport system

Period 06/01/75-05/31/77
Obligations FY78: TOTAL: $43,750
Prin. Invest. Tifft, W. G.
NASA Tech. Officer HQ-SC/Roman, N. G.
CASE Category 45-Elec Engr

NSG 7146 **University of Arizona** **1142**
Geologic investigation of Mercury from Mariner 10 television data

Period 07/01/75-10/31/79
Obligations FY78: $54,684 TOTAL: $165,337
Prin. Invest. Strom, R. G.
NASA Tech. Officer HQ-SL/Dwornik, S. E.; HQ-SL/Boyce, J. M.
CASE Category 32-Geological Sci

NSG 7168 **University of Arizona** **1143**
Studies in the production of astrophysical magnetic field

Period 09/01/75-01/01/79
Obligations FY78: $5,000 TOTAL: $45,000
Prin. Invest. Levy, E. H.
NASA Tech. Officer HQ-ST/Bohlin, J. D.
CASE Category 13-Physics

NSG 7201 **University of Arizona** **1144**
Orbital resonances in the planet-building process

Period 04/01/76-12/31/77
Obligations FY78: TOTAL: $43,473
Prin. Invest. Greenberg, R.; Hartmann, W. K.; Apman, C. H.
NASA Tech. Officer HQ-SL/Quaide, W. L.
CASE Category 32-Geological Sci

NSG 7238 **University of Arizona** **1145**
1977 Uranus occultation

Period 05/01/76-04/30/77
Obligations FY78: TOTAL: $41,580
Prin. Invest. Hubbard, W. B.
NASA Tech. Officer HQ-SL/Brunk, W. E.
CASE Category 11-Astronomy

NSG 7246 **University of Arizona** **1146**
Carbonaceous fragments

Period 07/01/76-06/30/78
Obligations FY78: TOTAL: $36,720
Prin. Invest. Gehrels, A. M.; Degewij, J.
NASA Tech. Officer HQ-SL/French, B. M.; HQ-SL/Quaide, W. L.
CASE Category 32-Geological Sci

NSG 7249 **University of Arizona** **1147**
High precision polarimetry of meteorites

Period 07/01/76-02/28/79
Obligations FY78: $33,993 TOTAL: $87,959
Prin. Invest. Zellner, B. H.
NASA Tech. Officer HQ-SL/French, B. M.; HQ-SL/Quaide, W. L.
CASE Category 32-Geological Sci

NSG 7265 **University of Arizona** **1148**
Analysis of cloud motions in the Pioneer 10 and 11 photographs of Jupiter

Period 08/01/76-07/31/77
Obligations FY78: TOTAL: $16,385
Prin. Invest. Smith, B.
NASA Tech. Officer HQ-SL/Fellows, R. F.
CASE Category 31-Atmos Sci

ARIZONA (Continued)

NSG 7333 **University of Arizona** **1149**
Study of isoelectric focusing for proteins and peptide hormones in a microgravity environment

Period	*Obligations*	
04/01/79-03/31/81	FY78: $100,000	TOTAL: $525,000
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Bier, M.	HQ-ET/Vitale, J. A.	59-Life Sci, NEC

NSG 7358 **University of Arizona** **1150**
International meeting and book on 'Protostars and planets'

Period	*Obligations*	
11/01/77-10/31/78	FY78:	TOTAL: $8,000
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Gehrels, A. M.	HQ-SC/Roman, N. G. HQ-SS/Rasool, I. S.	11-Astronomy

NSG 7368 **University of Arizona** **1151**
A deep near infrared photographic sky survey as a support tool for the infrared astronomical satellite

Period	*Obligations*	
06/15/77-06/14/79	FY78: $17,970	TOTAL: $34,081
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Craine, E. R.	HQ-SC/Boggess, N. W. HQ-SC/Roman, N. G.	11-Astronomy

NSG 7374 **University of Arizona** **1152**
Evaluation of a field-ionization neutral mass spectrometer for possible comet fly-by missions in 1980's

Period	*Obligations*	
08/01/77-07/31/78	FY78: $22,006	TOTAL: $35,006
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Hsieh, K. C.	HQ-SL/Donn, B. D. HQ-SL/Brunk, W. E.	11-Astronomy

NSG 7419 **University of Arizona** **1153**
Generation and behavior of solar system magnetic fields

Period	*Obligations*	
03/01/78-02/28/79	FY78: $31,465	TOTAL: $31,465
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Levy, E. H.	HQ-SL/Quaide, W. L. HQ-SL/French, B. E.	32-Geological Sci

NSG 7436 **University of Arizona** **1154**
Rare earths in inclusions from different classes of carbonaceous chondrites

Period	*Obligations*	
03/01/78-02/28/79	FY78: $38,333	TOTAL: $38,333
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Boynton, W. V.	HQ-SL/French, B. M. HQ-SL/Quaide, W. L.	32-Geological Sci

ARKANSAS

NAS 9-15596 **Harding College** **1155**
Comparison of strength, building and aerobic training

Period	*Obligations*	
05/01/78-10/31/78	FY78: $15,000	TOTAL: $15,000
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Olree, H.	JSC/Sawin, C. F.	53-Other Medical

NAS 8-31550 **University of Arkansas - Fayetteville** **1156**
Statistical analyses of multivariate atmospheric variables

Period	*Obligations*	
10/31/75-03/31/79	FY78:	TOTAL: $32,485
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Tubbs, J. D.	MSFC/Falls, L. W. MSFC/Smith, O. E.	31-Atmos Sci

NAS 9-14251 **University of Arkansas - Fayetteville** **1157**
Remote sensing of soil moisture content

Period	*Obligations*	
06/01/74-08/31/79	FY78: $71,233	TOTAL: $204,233
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Waite, W. P.	JSC/Demel, K. J. JSC/Baldwin, R. R.	19-Phys Sci, NEC

NGL 04-001-007 **University of Arkansas - Fayetteville** **1158**
Application of lasers to instrumentation & measurement techniques

Period	*Obligations*	
06/15/70-02/28/79	FY78: $30,543	TOTAL: $402,382
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Testerman, M. K. Ballard, G. S.	ARC/Ragent, B. ARC/Privette, C. A.	41-Aero Engr

NSG 7106 **University of Arkansas - Fayetteville** **1159**
Scalable standard optical sources in VUV: Emissions from electron impact on metals

Period	*Obligations*	
02/15/75-02/14/79	FY78:	TOTAL: $67,000
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Hughes, R. H.	HQ-SC/Rosendhal, J. D. HQ-SC/Roman, N. G.	11-Astronomy

CALIFORNIA

NAS 1-9703 **California Institute of Technology** **1160**
Participation in seismology planning for the Viking 1975 missions

Period	*Obligations*	
04/08/70-09/30/78	FY78:	TOTAL: $1,139,000
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Anderson, D. L.	LARC/Williams, T. S., Jr. LARC/Glenny, W. R.	39-Env Sci, NEC

NAS 1-12311 **California Institute of Technology** **1161**
Participation in science planning for Viking 1975 mission in the area of biology

Period	*Obligations*	
07/02/73-12/31/78	FY78: $27,929	TOTAL: $316,122
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Horowitz, N. H.	LARC/Williams, T. S., Jr. LARC/Glenny, W. R.	51-Biology

NAS 2-6556 **California Institute of Technology** **1162**
Pioneer F/G data analysis

Period	*Obligations*	
09/17/71-09/30/78	FY78: $3,000	TOTAL: $208,949
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Munch, G.	ARC/Hall, C. F. ARC/Porter, D. L.	11-Astronomy

NAS 5-11066 **California Institute of Technology** **1163**
IMP-H&J electron isotope spectrometer experiment

Period	*Obligations*	
01/12/68-10/31/79	FY78: $150,023	TOTAL: $1,982,344
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Stone, E. C.	GSFC/Davis, M. A.	13-Physics

NAS 5-20721 **California Institute of Technology** **1164**
High energy cosmic rays experiment for International Sun Earth Explorer spacecraft

Period	*Obligations*	
02/07/75-07/30/80	FY78: $88,400	TOTAL: $1,544,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Stone, E. C.	GSFC/Gallagher, W. F. GSFC/Davis, M. A.	13-Physics

NAS 5-22939 **California Institute of Technology** **1165**
Helioscope camera definition study

Period	*Obligations*	
03/10/76-06/01/79	FY78:	TOTAL: $39,627
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Zirin, H. Prout, R. A.	GSFC/Neupert, W. M.	11-Astronomy

NAS 5-22965 **California Institute of Technology** **1166**
Nimbus G earth radiation budget sensor support

Period	*Obligations*	
01/27/76-01/26/79	FY78: $36,164	TOTAL: $66,164
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ingersoll, A. P.	GSFC/Nelsen, E. D.	31-Atmos Sci

NAS 5-23315 **California Institute of Technology** **1167**
Cosmic X-ray experiment for HEAO-2

Period	*Obligations*	
11/15/73-12/31/78	FY78: $223,472	TOTAL: $873,218
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Garmire, G. P.	GSFC/Wende, C. D.	11-Astronomy

NAS 5-24339 **California Institute of Technology** **1168**
Xe-filled proportional counter and study on use with hard X-ray imaging instrument

Period	*Obligations*	
09/28/77-10/31/78	FY78:	TOTAL: $54,960
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Garmire, G. P.	GSFC/Stouffer, C. G.	13-Physics

NAS 5-25049 **California Institute of Technology** **1169**
HEAO A-2 cosmic X-ray experiment mission support and data analysis support

Period	*Obligations*	
08/13/78-09/30/79	FY78: $60,446	TOTAL: $60,446
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Garmire, G. P.	GSFC/Wende, C. D.	13-Physics

NAS 8-27978 **California Institute of Technology** **1170**
Design, development & operation of the ACR-7 heavy nuclei experiment under the HEAO program

Period	*Obligations*	
06/23/72-09/30/80	FY78: $91,000	TOTAL: $359,060
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Stone, E. C.	MSFC/Talley, D. MSFC/Cochran, J.	11-Astronomy

NAS 8-29313 **California Institute of Technology** **1171**
Dynamics of unsteady cavitating cascades

Period	*Obligations*	
09/28/72-10/15/78	FY78: $74,913	TOTAL: $428,870
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Acosta, A. J.	MSFC/Gross, L. A. MSFC/Stinson, H. P., Jr.	46-Mech Engr

NGL 05-002-003 **California Institute of Technology** **1172**
Basic scientific research on lunar & planetary exploration

Period	*Obligations*	
12/01/59-11/30/80	FY78: $189,934	TOTAL: $3,038,767
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Muhleman, D. O.	HQ-SL/Brunk, W. E. HQ-SL/Murphy, R. E.	11-Astronomy

NGL 05-002-034 **California Institute of Technology** **1173**
Research in solar flares and the solar atmosphere

Period	*Obligations*	
05/18/65-09/30/78	FY78: $230,000	TOTAL: $2,587,353
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Zirin, H.	HQ-ST/Bohlin, J. D.	11-Astronomy

NGL 05-002-069 **California Institute of Technology** **1174**
Theoretical investigation of planetary interiors

Period	*Obligations*	
06/12/67-02/28/80	FY78:	TOTAL: $553,729
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Anderson, D. L.	HQ-SL/Quaide, W. L.	32-Geological Sci

NGL 05-002-105 California Institute of Technology 1175
Shock effects in minerals

Period 08/16/68-03/31/81 *Obligations* FY78: TOTAL: $887,404
Prin. Invest. Ahrens, T. J.
NASA Tech. Officer HQ-SL/Quaide, W. L.; HQ-SL/French, B. E.
CASE Category 32-Geological Sci

NGL 05-002-134 California Institute of Technology 1176
Modern astronomical instrument development

Period 10/27/69-09/30/81 *Obligations* FY78: $61,052 TOTAL: $661,552
Prin. Invest. Oke, J. B.
NASA Tech. Officer HQ-SC/Roman, N. G.; HQ-SC/Rosendhal, J. D.
CASE Category 11-Astronomy

NGL 05-002-140 California Institute of Technology 1177
Research in planetary astronomy

Period 04/11/69-03/31/81 *Obligations* FY78: $23,000 TOTAL: $480,950
Prin. Invest. Goldreich, P.
NASA Tech. Officer HQ-SL/Brunk, W. E.; HQ-SL/Murphy, R. E.
CASE Category 11-Astronomy

NGL 05-002-188 California Institute of Technology 1178
Lunar sample analysis

Period 02/03/71-01/01/81 *Obligations* FY78: $637,253 TOTAL: $4,619,587
Prin. Invest. Wasserburg, G. J.
NASA Tech. Officer JSC/Harris, J. W.
CASE Category 12-Chemistry

NGL 05-002-190 California Institute of Technology 1179
Lunar sample analysis

Period 01/19/71-01/31/80 *Obligations* FY78: $35,080 TOTAL: $834,105
Prin. Invest. Epstein, S.
NASA Tech. Officer JSC/Harris, J. W.
CASE Category 13-Physics

NGL 05-002-207 California Institute of Technology 1180
Research in infrared and X-ray astronomy

Period 02/18/71-09/30/80 *Obligations* FY78: $110,000 TOTAL: $795,000
Prin. Invest. Neugebauer, G.
NASA Tech. Officer HQ-SC/Boggess, N. W.; HQ-SC/Roman, N. G.
CASE Category 11-Astronomy

NGL 05-002-338 California Institute of Technology 1181
Petrologic and microprobe investigations on isotopically dated lunar samples

Period 02/01/74-01/30/81 *Obligations* FY78: $91,878 TOTAL: $479,359
Prin. Invest. Albee, A. L.
NASA Tech. Officer JSC/Harris, J. W.
CASE Category 13-Physics

NGR 05-002-114 California Institute of Technology 1182
Radio interferometry of Mars and Venus

Period 10/11/68-09/30/78 *Obligations* FY78: $48,325 TOTAL: $372,396
Prin. Invest. Muhleman, D. O.
NASA Tech. Officer HQ-SL/Brunk, W. E.; HQ-SL/Quaide, W. L.
CASE Category 11-Astronomy

NGR 05-002-117 California Institute of Technology 1183
Analysis and evaluation of alternative approaches to photography from a Mercury/Venus flyby

Period 10/01/68-01/31/78 *Obligations* FY78: TOTAL: $573,022
Prin. Invest. Murray, B. C.
NASA Tech. Officer HQ-SL/Dwornik, S. E.; HQ-SL/Wahmann, R.
CASE Category 32-Geological Sci

NGR 05-002-121 California Institute of Technology 1184
A study of water metabolism in neurospora crassa

Period 01/01/69-12/31/78 *Obligations* FY78: $55,000 TOTAL: $439,119
Prin. Invest. Horowitz, N. H.
NASA Tech. Officer HQ-SB/Young, R. S.
CASE Category 51-Biology

NGR 05-002-160 California Institute of Technology 1185
Research in particles and fields

Period 10/27/69-09/30/78 *Obligations* FY78: $362,000 TOTAL: $2,636,000
Prin. Invest. Vogt, R. E.
NASA Tech. Officer HQ-SC/Fishman, G. J.; HQ-SC/Opp, A. G.
CASE Category 11-Astronomy

NGR 05-002-256 California Institute of Technology 1186
Study and research on experimental tests of gravitation theory

Period 02/23/72-12/31/78 *Obligations* FY78: $23,000 TOTAL: $163,000
Prin. Invest. Thorne, K. S.
NASA Tech. Officer HQ-SC/Roman, N. G.; HQ-SC/Henry, R. C.
CASE Category 11-Astronomy

NGR 05-002-281 California Institute of Technology 1187
High angular resolution of H II regions and associated galactic sources

Period 03/01/73-10/31/78 *Obligations* FY78: $10,500 TOTAL: $299,028
Prin. Invest. Werner, M. W.
NASA Tech. Officer ARC/Haughney, L. C.
CASE Category 11-Astronomy

NGR 05-002-284 California Institute of Technology 1188
High angular resolution cosmic X-ray astronomy observations in the energy band 0.15-2Ke and XUV observations of early stars from an attitude controlled rocket

Period 03/05/73-09/30/79 *Obligations* FY78: $268,153 TOTAL: $1,020,232
Prin. Invest. Garmire, G. P.
NASA Tech. Officer GSFC/Bissell, E. E.; HQ-SC/Opp, A. G.
CASE Category 11-Astronomy

NGR 05-002-303 **California Institute of Technology** **1189**
Systematic search program for new Apollo Amor asteroids

Period | *Obligations*
08/01/73-09/30/78 | FY78: $149,023 | TOTAL: $341,286

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Shoemaker, E. M. | HQ-SL/Dwornik, S. E. | 32-Geological Sci
HQ-SL/Boyce, J. M.

NGR 05-002-333 **California Institute of Technology** **1190**
Lunar sample analysis

Period | *Obligations*
02/01/74-01/31/79 | FY78: $84,000 | TOTAL: $459,400

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Tombrello, T. A. | JSC/Harris, J. W. | 13-Physics

NGR 05-002-345 **California Institute of Technology** **1191**
A 65-100 cm aperture photo-heliograph for the space shuttle

Period | *Obligations*
10/01/73-09/30/77 | FY78: | TOTAL: $335,000

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Zirin, H. | HQ-ST/Timothy, A. F. | 13-Physics

1005 **California Institute of Technology** **1192**
Utilization of stages to determine knockdown factors from measured initial imperfections

Period | *Obligations*
07/01/74-10/31/78 | FY78: | TOTAL: $101,097

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Babcock, C. D., Jr. | LARC/Davis, R. C. | 41-Aero Engr

1483 **California Institute of Technology** **1193**
Low speed impact damage on composite materials

Period | *Obligations*
01/15/78-01/14/79 | FY78: $34,966 | TOTAL: $34,966

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Knauss, W. G. | LARC/Starnes, J. H. | 41-Aero Engr
Babcock, C. D., Jr.

2224 **California Institute of Technology** **1194**
Methane and stratospheric water

Period | *Obligations*
09/01/77-09/01/79 | FY78: $29,000 | TOTAL: $57,656

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Yung, Y. L. | ARC/Pollack, J. B. | 31-Atmos Sci

2263 **California Institute of Technology** **1195**
Some aspects of the photochemistry of the atmospheres of Mars and Earth

Period | *Obligations*
12/01/77-12/31/78 | FY78: $16,494 | TOTAL: $16,494

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Yung, Y. L. | ARC/Pollack, J. B. | 31-Atmos Sci
ARC/Whitten, R. C.

NSG 5197 **California Institute of Technology** **1196**
Search for periodic variations in the X-ray flux from the galactic center

Period | *Obligations*
08/01/77-07/31/78 | FY78: | TOTAL: $10,109

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Garmire, G. P. | GSFC/Kupperian, J. E., Jr. | 11-Astronomy

NSG 5208 **California Institute of Technology** **1197**
Support of joint infrared and Copernicus X-ray observations

Period | *Obligations*
09/01/77-08/31/79 | FY78: | TOTAL: $5,986

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Neugebauer, G. | GSFC/Kupperian, J. E., Jr. | 11-Astronomy

NSG 5224 **California Institute of Technology** **1198**
Earthquake research: Premonitory models and the physics of crustal distortion

Period | *Obligations*
01/16/78-01/15/79 | FY78: $125,001 | TOTAL: $125,001

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Whitcomb, J. H. | GSFC/Allenby, R. J. | 32-Geological Sci
Allen, C. R. | GSFC/Mead, G. D.
Anderson, D. L.

NSG 5243 **California Institute of Technology** **1199**
Observations of faint, high latitude blue stars and ultraviolet spectroscopy of peculiar galaxies and quasars

Period | *Obligations*
03/01/78-02/28/79 | FY78: $32,000 | TOTAL: $32,000

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Greenstein, J. L. | GSFC/Boggess, A. | 11-Astronomy
Oke, J. B. | GSFC/West, D. K.

NSG 5244 **California Institute of Technology** **1200**
Ultraviolet observations of quasi-stellar objects

Period | *Obligations*
03/01/78-02/28/79 | FY78: $18,000 | TOTAL: $18,000

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Schmidt, M. | GSFC/Boggess, A. | 11-Astronomy
GSFC/West, D. K.

NSG 5267 **California Institute of Technology** **1201**
Theoretical investigation of the mechanics of strike slip faulting in the unelastic program

Period | *Obligations*
04/01/78-03/31/79 | FY78: $13,440 | TOTAL: $13,440

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Melosh, H. J. | GSFC/Allenby, R. J. | 32-Geological Sci
GSFC/Mead, G. D.

NSG 5301 **California Institute of Technology** **1202**
Research in atmospheric chemistry and transport

Period	*Obligations*	
09/15/78-09/14/79	FY78: $16,739	TOTAL: $16,739
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Yung, Y. L.	GSFC/Hansen, J. E.	31-Atmos Sci

NSG 7094 **California Institute of Technology** **1203**
Reduction of Mariner 71 infrared radiometer data

Period	*Obligations*	
07/01/74-09/30/77	FY78:	TOTAL: $18,567
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Neugebauer, G.	HQ-SL/Fellows, R. F.	32-Geological Sci

NSG 7125 **California Institute of Technology** **1204**
Scientific rationale and feasibility of developing a planetary scanning electron microscope

Period	*Obligations*	
04/01/75-03/31/78	FY78:	TOTAL: $15,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Albee, A. L.	HQ-SL/Dwornik, S. E.	19-Phys Sci, NEC

NSG 7129 **California Institute of Technology** **1205**
Relationship of impact cratering to the evolution of the lunar surface

Period	*Obligations*	
04/01/75-03/31/81	FY78:	TOTAL: $239,162
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ahrens, T. J.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. M.	

NSG 7202 **California Institute of Technology** **1206**
Laboratory partitioning studies relevant to the interpretation of lunar and meteoritic trace element data

Period	*Obligations*	
02/01/76-01/31/79	FY78: $79,125	TOTAL: $223,463
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Burnett, D. S.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. M.	

NSG 7275 **California Institute of Technology** **1207**
Heteronuclear spin dynamics and new tools for characterization of bulk and surface properties of solids

Period	*Obligations*	
10/01/76-06/30/79	FY78: $25,889	TOTAL: $52,012
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Vaughan, R.	HQ-RR/Schwenk, F. C.	13-Physics

NSG 7316 **California Institute of Technology** **1208**
Crater modification by gravity

Period	*Obligations*	
02/01/77-01/31/79	FY78: $39,960	TOTAL: $72,400
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Melosh, H. J.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. M.	

NSG 7342 **California Institute of Technology** **1209**
Theoretical studies of solar oscillation

Period	*Obligations*	
04/01/77-09/30/78	FY78: $14,996	TOTAL: $24,996
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Goldreich, P.	HQ-ST/Bohlin, J. D.	13-Physics

NSG 7376 **California Institute of Technology** **1210**
Photochemistry of the Jovian planets and their satellites

Period	*Obligations*	
11/01/77-10/31/78	FY78:	TOTAL: $27,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Yung, Y. L.	HQ-SL/Mitz, M. A.	31-Atmos Sci
Strobel, D. F.	HQ-SL/Brunk, W. E.	

NSG 7387 **California Institute of Technology** **1211**
Circadian neurons in organ and tissue culture: A feasibility study

Period	*Obligations*	
08/01/77-01/31/78	FY78: $60,000	TOTAL: $60,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Strumwasser, F.	HQ-SB/Winter, D. L.	51-Biology

NSG 7442 **California Institute of Technology** **1212**
Spectral characterization of analogs to the Martian regolith

Period	*Obligations*	
10/01/77-09/30/78	FY78: $24,153	TOTAL: $24,153
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Albee, A. L.	HQ-SL/Dwornik, S. E.	32-Geological Sci
Grossman, G. R.	HQ-SL/Boyce, J.	

NSG 7458 **California Institute of Technology** **1213**
Space shuttle based compression studies of planetary materials and recovery of very high pressure phases of possible technological usefulness

Period	*Obligations*	
03/01/78-02/28/79	FY78: $50,000	TOTAL: $50,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ahrens, T. J.	HQ-RR/Henry, W.	13-Physics
Gault, D. E.		
Ross, M. D.		

NSG 9019 **California Institute of Technology** **1214**
Shock compression measurements on lunar samples

Period	*Obligations*	
10/01/74-01/31/79	FY78: $91,100	TOTAL: $310,600
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ahrens, T. J.	JSC/Harris, J. W.	19-Phys Sci, NEC

NSG 4014 **California Polytechnic State Univ.** **1215**
Wake vortex turbulence study using radio controlled models

Period	*Obligations*	
09/23/77-11/21/78	FY78:	TOTAL: $24,981
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sandlin, D. R.	DFRC/Banner, R. D.	41-Aero Engr
Nicolaides, J. D.	DFRC/Friend, E. L.	

NASW 2835 **California State University - Chico** 1216
Spacemobile operation and maintenace: Space science education project

Period	*Obligations*	
07/01/75-06/30/79	FY78: $1,133,997	TOTAL: $3,763,418
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Unavailable	HQ-FE/Rich, W. B.	99-Multi-Discip

NAS 1-14621 **California State University - Fullerton** 1217
Participation in the science planning for the Viking 1975 missions in the area of meteorology

Period	*Obligations*	
08/16/76-09/30/78	FY78: $34,000	TOTAL: $106,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ryan, J. A.	LARC/Ward, J. C., Jr.	31-Atmos Sci
	LARC/Glenny, W. R.	

NCA 2-253701 **California State University - Fullerton** 1218
Fourier transform infrared spectra of several Freons

Period	*Obligations*	
06/01/77-10/31/78	FY78: $4,800	TOTAL: $9,800
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Nanes, R.	ARC/Boese, R. W.	13-Physics

NCA 2-253801 **California State University - Fullerton** 1219
Real-time simulation of computer-assisted sequencing and scheduling of terminal area operations

Period	*Obligations*	
07/01/78-06/30/80	FY78: $8,000	TOTAL: $8,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Dear, R. G.	ARC/Tobias, L.	22-Computer Science
	ARC/Erzberger, H.	

NSG 7314 **California State University - Fullerton** 1220
Meteoritic bismuth and lead-208 micro distributions

Period	*Obligations*	
02/01/77-01/31/79	FY78: $30,828	TOTAL: $59,168
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Woolum, D. S.	HQ-SL/French, B. M.	32-Geological Sci
Burnett, D. S.	HQ-SL/Quaide, W. L.	

NCA 2-290704 **California State Univ.- hayward** 1221
Investigations of racemization of amino acids in geologic materials

Period	*Obligations*	
10/01/76-12/31/78	FY78:	TOTAL: $3,990
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Warnke, D. A.	ARC/Pollock, G. E.	32-Geological Sci

NCA 2-290801 **California State Univ.- hayward** 1222
Effects of heat acclimation and exercise on acceleration tolerance

Period	*Obligations*	
01/01/78-12/31/79	FY78: $17,000	TOTAL: $17,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Brock, P. J.	ARC/Greenleaf, J. E.	59-Life Sci, NEC

NSG 2199 **California State University - Los Angeles** 1223
Biochemical and structural studies on the thermal resistance of 'hardy' bacterial spores

Period	*Obligations*	
01/01/77-07/31/80	FY78: $40,000	TOTAL: $65,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Andreoli, A. J.	ARC/Hochstein, L. I.	51-Biology

NSG 7229 **California State University - Los Angeles** 1224
Development of a direct contact heat exchanger for application in power generation systems utilizing geothermal brines

Period	*Obligations*	
06/15/76-09/30/78	FY78:	TOTAL: $25,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Maniv, R.	HQ-LU/Pohly, J. G.	46-Mech Engr

NSG 7261 **California State University - Los Angeles** 1225
Vacuum ultraviolet photoactivation of molecular nitrogen

Period	*Obligations*	
07/01/76-06/30/77	FY78:	TOTAL: $4,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bragin, J.	HQ-SB/Young, R. S.	12-Chemistry

NSG 7263 **California State University - Los Angeles** 1226
Differential scanning calorimetry of coal

Period	*Obligations*	
11/15/76-01/14/79	FY78: $27,900	TOTAL: $52,900
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gold, P. I.	JPL/England, C.	46-Mech Engr
	HQ-LU/Pohly, J. G.	

NAS 5-24436 **California State University - Northridge** 1227
Harmonic characteristics of aerodata from binary communication channels

Period	*Obligations*	
02/22/78-06/01/78	FY78: $5,000	TOTAL: $5,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Nathanson, W. I.	GSFC/Greene, E. P.	22-Computer Science
	GSFC/Poland, W. B., Jr.	

NSG 3065 **California State University - Northridge** 1228
Study of rolling element dynamic interactions with separators and raceway paths

Period	*Obligations*	
05/15/75-10/14/79	FY78: $50,000	TOTAL: $119,980
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Nypan, L. J.	LERC/Coe, H. H.	46-Mech Engr

NSG 4011 **California State University - Northridge** 1229
Computer graphics: Integration of twenty years experience

Period	*Obligations*	
04/01/77-03/31/78	FY78:	TOTAL: $24,918
Prin. Invest.	*NASA Tech. Officer*	*CASE Catego.*
Abbott, R. J.	DFRC/Anderson, K. F.	22-Computer Science
	DFRC/Yount, S. K.	

NSG 7456 **California State University - Northridge** **1230**
Magnetic and velocity field of faculae in collaboration with OSO-1

Period 06/01/78-09/30/79 *Obligations* FY78: $13,153 TOTAL: $13,153
Prin. Invest. Chapman, G. T. *NASA Tech. Officer* HQ-ST/Bohlin, J. *CASE Category* 13-Physics

NGR 05-058-003 **California State University - Sacramento** **1231**
Development of combustion stability specifications and verification procedures for liquid propellant rocket engines

Period 02/23/72-09/30/78 *Obligations* FY78: TOTAL: $31,269
Prin. Invest. Reardon, F. H. *NASA Tech. Officer* LERC/Priem, R. J. *CASE Category* 42-Astro Engr

NCA 2-283801 **Harvey Mudd College** **1232**
Solutions to operational problems encountered in the application of laser diagnostic systems to helicopter rotors

Period 05/30/78-08/31/80 *Obligations* FY78: $44,000 TOTAL: $44,000
Prin. Invest. Williams, H. *NASA Tech. Officer* ARC/Luebs, A. B.; ARC/Orloff, K. L. *CASE Category* 41-Aero Engr

NCA 2-280801 **Hastings College of Law** **1233**
A joint venture to consolidate law library collections and produce for mutual use and benefit administrative law practice manuals

Period 09/25/78-09/25/79 *Obligations* FY78: $20,000 TOTAL: $20,000
Prin. Invest. Wolcott, T. *NASA Tech. Officer* ARC/Glazer, J. H. *CASE Category* 99-Multi-Discip

NSG 2244 **Humboldt State University** **1234**
Developing and demonstrating an institutional mechanism for transferring remote sensing technology

Period 06/01/77-11/30/78 *Obligations* FY78: $356,420 TOTAL: $668,452
Prin. Invest. Hankins, D. *NASA Tech. Officer* ARC/Lamb, D. R. *CASE Category* 19-Phys Sci, NEC

NAS 1-11854 **Pomona College** **1235**
Participation in inorganic chemistry planning for the Viking 1975 missions

Period 08/09/72-09/30/78 *Obligations* FY78: $76,938 TOTAL: $190,759
Prin. Invest. Baird, A. K. *NASA Tech. Officer* LARC/Williams, T. S., Jr.; LARC/Glenny, W. R. *CASE Category* 12-Chemistry

NSG 1430 **San Diego State University** **1236**
Use of the Chappuis band for determination of modern and historical stratospheric ozone levels

Period 07/15/77-08/31/79 *Obligations* FY78: $34,000 TOTAL: $67,715
Prin. Invest. Angione, R. J. *NASA Tech. Officer* LARC/Levine, J. S. *CASE Category* 31-Atmos Sci

NSG 7026 **San Diego State University** **1237**
Thermodynamic models of lunar meteorite impact incorporating a target porosity parameter

Period 06/01/74-05/31/78 *Obligations* FY78: TOTAL: $110,728
Prin. Invest. Rehfuss, D. E. *NASA Tech. Officer* HQ-SL/Goldstein, B. E.; HQ-SL/Quaide, W. L. *CASE Category* 32-Geological Sci

NCA 2-660703 **San Francisco State University** **1238**
Three-dimensional numerical calculations related to star formation

Period 06/02/77-12/01/78 *Obligations* FY78: $7,000 TOTAL: $27,500
Prin. Invest. Hagar, C.; Bodenheimer, P. *NASA Tech. Officer* ARC/Black, D. C. *CASE Category* 13-Physics

NCA 2-660704 **San Francisco State University** **1239**
Preparation of a model Martian soil

Period 09/15/77-11/30/78 *Obligations* FY78: $21,300 TOTAL: $28,450
Prin. Invest. Burns, J. A. *NASA Tech. Officer* ARC/Klein, H. P.; ARC/DeVincenzi, D. L. *CASE Category* 59-Life Sci, NEC

NCA 2-660801 **San Francisco State University** **1240**
Joint use of resources for operation of the NASA-Ames university consortium office

Period 10/01/78-09/30/79 *Obligations* FY78: $50,000 TOTAL: $50,000
Prin. Invest. Eisenberg, L.; Heidtmann, R. W. *NASA Tech. Officer* ARC/Tomberlin, K. A. *CASE Category* 99-Multi-Discip

NCA 2-660802 **San Francisco State University** **1241**
Determination of the stability constants and self-organizing properties of ternary complexes involving nucleotides, amino acids and metal cations by potentiometric titration

Period 01/01/78-12/31/78 *Obligations* FY78: $11,356 TOTAL: $11,356
Prin. Invest. Orenberg, J. B. *NASA Tech. Officer* ARC/Lawless, J. G. *CASE Category* 12-Chemistry

NCA 2-660803 **San Francisco State University** **1242**
An evaluation of audio and video teleconferencing techniques and usage

Period 12/01/77-11/30/78 *Obligations* FY78: $7,573 TOTAL: $7,573
Prin. Invest. Compesi, R.; Erickson, H. E. *NASA Tech. Officer* ARC/Gibbs, B. P. *CASE Category* 99-Multi-Discip

NCA 2-660804 San Francisco State University 1243
Magnetic resonance studies of the mechanistic role of metal ions in chemical evolution

Period	Obligations	
06/15/78-06/15/79	FY78: $4,500	TOTAL: $4,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Buttlaire, D. H.	ARC/Lawless, J. G.	12-Chemistry

NCA 2-660805 San Francisco State University 1244
Metal ions and the evolution of photosynthesis

Period	Obligations	
07/01/78-06/30/79	FY78: $10,000	TOTAL: $10,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Orenberg, J. B.	ARC/Lawless, J. G.	12-Chemistry

NCA 2-660806 San Francisco State University 1245
Theoretical studies of solar wind dynamics

Period	Obligations	
09/01/78-08/31/79	FY78: $6,000	TOTAL: $6,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kilpatrick, T. Nerney, S. F.	ARC/Barnes, A.	13-Physics

NSG 2210 San Francisco State University 1246
Elements of search strategy for SETI

Period	Obligations	
01/15/77-03/15/79	FY78: $115,691	TOTAL: $169,943
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Seeger, C. S.	ARC/Billingham, J. ARC/Stull, M. A.	99-Multi-Discip

NSG 2281 San Francisco State University 1247
Chronic stress, ethanol and testicular function

Period	Obligations	
11/01/77-11/01/79	FY78: $40,000	TOTAL: $40,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kakihana, R.	ARC/Oyama, J.	59-Life Sci, NEC

NCA 2-675801 San Jose State University 1248
Assessment of motion sickness in rats: An investigation of pica as the relevant behavioral manifestation

Period	Obligations	
10/01/77-09/30/79	FY78: $18,700	TOTAL: $18,700
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fox, R. A.	ARC/Daunton, N. G.	61-Biol Aspects

NCA 2-675803 San Jose State University 1249
The effect of H2 and irradiating wavelength on photochemical production of organic molecules under simulated Jovian conditions

Period	Obligations	
06/01/78-09/30/78	FY78: $3,024	TOTAL: $3,024
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Koenig, I.	ARC/Flores, J. J.	12-Chemistry

NCA 2-675804 San Jose State University 1250
Case study: Evaluation of effectiveness of information services relating to the Pioneer/Venus space mission

Period	Obligations	
04/01/78-12/31/78	FY78: $2,400	TOTAL: $2,400
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Brown, D. E.	ARC/Miller, S. A.	99-Multi-Discip

NCA 2-675806 San Jose State University 1251
Inorganic crystal clathrates: Development and modelling of a new concept in fire control

Period	Obligations	
03/01/78-09/30/78	FY78: $11,860	TOTAL: $11,860
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ling, A. C.	ARC/Altman, R. L.	12-Chemistry

NCA 2-675807 San Jose State University 1252
Interstitial encapsulation of solid inorganic halons: An investigation of the synthesis and characterization of thermally activated flame quenching and suppressing agents

Period	Obligations	
03/01/78-09/30/78	FY78: $11,860	TOTAL: $11,860
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mayer, L. A.	ARC/Altman, R. L.	12-Chemistry

NCA 2-675808 San Jose State University 1253
Central synoptic actions of antimotion sickness agents

Period	Obligations	
05/01/78-04/30/80	FY78: $19,927	TOTAL: $19,927
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fox, R. A.	ARC/Daunton, N. G.	61-Biol Aspects

NCA 2-675809 San Jose State University 1254
Stratospheric-mesospheric dynamics

Period	Obligations	
06/04/78-06/03/79	FY78: $19,996	TOTAL: $19,996
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Riegel, C. A.	ARC/Whitten, R. C. ARC/Page, W. A.	31-Atmos Sci

NCA 2-675810 San Jose State University 1255
Radiation chemistry studies of carbon suboxide polymers: An investigation of a proposed pre-biotic link to the origins of life

Period	Obligations	
06/01/78-01/31/79	FY78: $12,000	TOTAL: $12,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ling, A. C. Mayer, L. A.	ARC/Oyama, V. I.	12-Chemistry

NGR 05-046-011 San Jose State University 1256
Investigation of transport parameters relating to hyperfiltration for waste water purification

Period	Obligations	
04/01/70-12/31/78	FY78: $45,544	TOTAL: $339,868
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Spitze, L. A. Ballou, E. V.	ARC/Wydeven, T. J. ARC/Quattrone, P. D.	12-Chemistry

NSG 2047 San Jose State University 1257
Study of planetary meteorology
Period: 09/15/74-03/31/79 Obligations: FY78: $7,706 TOTAL: $39,806
Prin. Invest.: Riegel, C. A. NASA Tech. Officer: ARC/Pollack, J. B. CASE Category: 11-Astronomy

NSG 2066 San Jose State University 1258
The development of superoxides as improved oxygen sources for breathing apparatus
Period: 01/20/75-06/19/79 Obligations: FY78: $41,758 TOTAL: $161,592
Prin. Invest.: Spitze, L. A.; Ballou, E. V. NASA Tech. Officer: ARC/Wydeven, T. J. CASE Category: 12-Chemistry

NSG 2090 San Jose State University 1259
Oxygen effects and early biochemical evolution
Period: 06/01/75-05/31/79 Obligations: FY78: $29,500 TOTAL: $102,232
Prin. Invest.: Neptune, J. A.; Satyanarayana, T. NASA Tech. Officer: ARC/Klein, H. P. CASE Category: 51-Biology

NSG 2130 San Jose State University 1260
Two-dimensional stratospheric model modification
Period: 02/01/76-03/31/79 Obligations: FY78: $39,493 TOTAL: $115,573
Prin. Invest.: Riegel, C. A. NASA Tech. Officer: ARC/Whitten, R. C.; ARC/Borucki, W. J. CASE Category: 31-Atmos Sci

NSG 2186 San Jose State University 1261
Characterization and formulation of fluorocarbon ether elastomers
Period: 10/01/76-09/30/78 Obligations: FY78: $15,000 TOTAL: $82,023
Prin. Invest.: Neptune, J. A.; Korus, R. A. NASA Tech. Officer: ARC/Rosser, R. W.; ARC/Parker, J. A. CASE Category: 12-Chemistry

NSG 2209 San Jose State University 1262
A study of processing parameters for non-metallic composites
Period: 03/01/77-02/28/79 Obligations: FY78: $26,117 TOTAL: $41,574
Prin. Invest.: Ling, A. C.; Holloway, J. NASA Tech. Officer: ARC/Fohlen, G. M.; ARC/Heimbuck, A. H. CASE Category: 12-Chemistry

NSG 2213 San Jose State University 1263
A unified system for the biological exploration of Mars
Period: 03/01/77-02/28/79 Obligations: FY78: $24,682 TOTAL: $39,136
Prin. Invest.: Ballard, R. W. NASA Tech. Officer: ARC/Dalton, B. P.; ARC/Johnson, R. D. CASE Category: 51-Biology

NSG 2219 San Jose State University 1264
Hot surface ignition temperature of aircraft hydraulic fluids
Period: 05/01/77-12/31/78 Obligations: FY78: $42,000 TOTAL: $67,410
Prin. Invest.: Myronuk, D. J. NASA Tech. Officer: ARC/Fish, R. H. CASE Category: 12-Chemistry

NSG 2224 San Jose State University 1265
Analytical/experimental study of passive fire protection systems
Period: 04/15/77-04/14/78 Obligations: FY78: TOTAL: $16,055
Prin. Invest.: Holmstrom, F.; Durazzo, R. M. NASA Tech. Officer: ARC/Mansfield, J. A.; ARC/Riccitiello, S. R. CASE Category: 49-Engr, NEC

NSG 2235 San Jose State University 1266
Experimental study of passive fire protection systems
Period: 05/01/77-06/30/78 Obligations: FY78: $4,022 TOTAL: $28,928
Prin. Invest.: Anderson, R.; Sohrab, S. H. NASA Tech. Officer: ARC/Mansfield, J. A. CASE Category: 49-Engr, NEC

NSG 2236 San Jose State University 1267
Feasibility study of using surface penetrators for mineral exploration
Period: 05/01/77-12/31/78 Obligations: FY78: $14,261 TOTAL: $34,279
Prin. Invest.: Anderson, D. W.; Davis, A. S. NASA Tech. Officer: ARC/Blanchard, M. B.; ARC/Bunch, T. E. CASE Category: 32-Geological Sci

NSG 2239 San Jose State University 1268
Coastal zone color scanner surface truth measurements
Period: 06/01/77-01/31/79 Obligations: FY78: $25,000 TOTAL: $39,975
Prin. Invest.: Broenkow, W. W. NASA Tech. Officer: ARC/Wrigley, R. C. CASE Category: 33-Oceanography

NSG 2247 San Jose State University 1269
Structural characterization of plasma polymerized perfluorobutene-2
Period: 08/01/77-05/30/79 Obligations: FY78: TOTAL: $25,207
Prin. Invest.: Acrivos, J.; Naar, C. NASA Tech. Officer: ARC/Wydeven, T. J. CASE Category: 12-Chemistry

NSG 2269 San Jose State University 1270
Perception and performance in flight simulation: The contribution of vestibular, visual and auditory information
Period: 10/01/77-10/01/79 Obligations: FY78: $373,085 TOTAL: $373,085
Prin. Invest.: Clark, B. NASA Tech. Officer: ARC/Stewart, J. D. CASE Category: 69-Psych, NEC

NSG 2273 **San Jose State University** 1271
Synthesis of fluorocarbon ether monomers and elastomers

Period	*Obligations*	
10/01/77-07/31/78	FY78: $13,592	TOTAL: $13,592
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ling, A. C.	ARC/Rosser, R. W.	12-Chemistry
Kwong, H.	ARC/Parker, J. A.	

NSG 2274 **San Jose State University** 1272
Characterization and degradation studies on aromatic polyimides and polyesters

Period	*Obligations*	
10/01/77-09/30/78	FY78: $57,948	TOTAL: $57,948
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ling, A. C.	ARC/Heimbuch, A. H.	12-Chemistry
	ARC/Golub, M. A.	

NSG 2293 **San Jose State University** 1273
A heart rate index for predicting energy allocations

Period	*Obligations*	
11/01/77-08/31/78	FY78: $24,949	TOTAL: $24,949
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lund, G. F.	ARC/Williams, B. A.	51-Biology

NSG 2302 **San Jose State University** 1274
A theoretical model of the effect of temperature on the limiting oxygen index of polymeric materials

Period	*Obligations*	
12/01/77-11/30/78	FY78: $22,648	TOTAL: $22,648
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ling, A. C.	ARC/Heimbuch, A. H.	12-Chemistry
	ARC/Parker, J. A.	

NSG 2305 **San Jose State University** 1275
Applications of X-ray fluorescence spectrometry to water quality assurance programs

Period	*Obligations*	
02/01/78-01/31/79	FY78: $17,898	TOTAL: $17,898
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ling, A. C.	ARC/Nishioka, K.	39-Env Sci, NEC

NSG 2307 **San Jose State University** 1276
A study of the physical properties of composites

Period	*Obligations*	
02/01/78-01/31/79	FY78: $29,988	TOTAL: $29,988
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Holmstrom, F.	ARC/Mansfield, J. A.	46-Mech Engr
Durazzo, R. M.	ARC/Fish, R. H.	
Buckley, W. F.		

NSG 2314 **San Jose State University** 1277
The Ames planetary boundary layer model

Period	*Obligations*	
04/01/78-03/31/79	FY78: $15,000	TOTAL: $15,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bornstein, R. D.	ARC/Swan, P. R.	31-Atmos Sci

NSG 2315 **San Jose State University** 1278
Modification of polymeric substrata for the gas chromatographic analyses of CO, carbonyls and O2 in atmospheres

Period	*Obligations*	
04/01/78-01/31/79	FY78: $7,993	TOTAL: $7,993
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mayer, L. A.	ARC/Woeller, F. H.	31-Atmos Sci
Christensen, W. W.	ARC/Oyama, V. I.	

NSG 2332 **San Jose State University** 1279
Fiber reinforced polymeric materials

Period	*Obligations*	
08/01/78-12/30/78	FY78: $8,519	TOTAL: $8,519
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Anderson, R. N.	ARC/Mansfield, J. A.	47-Materials Engr
Arumughem, J.	ARC/Fish, R. H.	

NSG 2339 **San Jose State University** 1280
Changes in cortisol and antidiuretic hormone during induced motion sickness in cats

Period	*Obligations*	
10/01/78-09/30/79	FY78: $9,826	TOTAL: $9,826
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fox, R. A.	ARC/Suri, K. P.	51-Biology
	ARC/Daunton, N. G.	

NCA 2-720701 **Sonoma State College** 1281
Study of the calk-alkaline plutonic complex of the southwestern Sierra Nevada foothills

Period	*Obligations*	
08/15/76-12/31/77	FY78:	TOTAL: $3,333
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Vennum, W.	ARC/Bunch, T. E.	32-Geological Sci

NAS 1-9682 **Stanford University** 1282
Participation in imaging planning for the Viking 1975 missions

Period	*Obligations*	
03/24/70-09/30/78	FY78: $69,712	TOTAL: $712,863
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Levinthal, E. C.	LARC/Williams, T. S., Jr.	
	LARC/Glenny, W. R.	99-Multi-Discip

NAS 1-9692 **Stanford University** 1283
Participation in the biology planning for the Viking 1975 missions

Period	*Obligations*	
04/13/70-09/30/78	FY78:	TOTAL: $57,126
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lederberg, J.	LARC/Williams, T. S., Jr.	51-Biology
	LARC/Glenny, W. R.	

NAS 1-9701 **Stanford University** 1284
Participation in the radio science planning for the Viking 1975 missions

Period 04/21/70-09/30/78
Obligations FY78: $118,000 TOTAL: $475,678
Prin. Invest. Tyler, G. L.
NASA Tech. Officer LARC/Williams, T. S., Jr.; LARC/Glenny, W. R.
CASE Category 45-Elec Engr

NAS 2-8898 **Stanford University** 1285
Selected studies in research and development of management techniques

Period 06/09/75-12/31/78
Obligations FY78: $28,611 TOTAL: $125,295
Prin. Invest. Pederson, C. A.
NASA Tech. Officer ARC/Barnett, R. M.; ARC/Eddy, R.
CASE Category 75-Political Sci

NAS 2-9083 **Stanford University** 1286
Study of the applicability of integrated circuit sensor technology to general aviation orientation estimation

Period 12/01/75-11/01/78
Obligations FY78: TOTAL: $137,682
Prin. Invest. DeBra, D. B.
NASA Tech. Officer ARC/Denery, D. G.; ARC/Creer, B. Y.
CASE Category 41-Aero Engr

NAS 3-14336 **Stanford University** 1287
Research for the fundamental study of full-coverage film cooling

Period 07/13/71-10/12/77
Obligations FY78: TOTAL: $325,200
Prin. Invest. Kays, W. M.
NASA Tech. Officer LERC/Gaugler, R. E.
CASE Category 41-Aero Engr

NAS 5-20871 **Stanford University** 1288
Experimental study of interactions in the magnetosphere between energetic particles and VLF waves

Period 02/11/75-12/11/79
Obligations FY78: $130,000 TOTAL: $621,000
Prin. Invest. Helliwell, R. A.
NASA Tech. Officer GSFC/Davis, M. A.
CASE Category 13-Physics

NAS 5-21960 **Stanford University** 1289
Gravity only orbit control subsystem

Period 12/21/73-05/30/80
Obligations FY78: $27,789 TOTAL: $229,789
Prin. Invest. DeBra, D. B.
NASA Tech. Officer GSFC/Kant, S.
CASE Category 42-Astro Engr

NAS 5-23522 **Stanford University** 1290
Radiographic applications of spatial frequency multiplexing

Period 06/28/76-12/28/77
Obligations FY78: TOTAL: $40,000
Prin. Invest. MacOvski, A.
NASA Tech. Officer GSFC/Oseroff, H.
CASE Category 19-Phys Sci, NEC

NAS 5-24232 **Stanford University** 1291
Applications of heat capacity mapping mission satellite data to the study of urban heating patterns

Period 06/01/77-03/30/79
Obligations FY78: $39,498 TOTAL: $74,498
Prin. Invest. Lyon, R. J.
NASA Tech. Officer GSFC/Broderick, J. C.
CASE Category 32-Geological Sci

NAS 5-24409 **Stanford University** 1292
Controlled and naturally occurring wave particle interactions in the magnetosphere, for dynamic Explorer

Period 09/22/78-05/30/81
Obligations FY78: $40,000 TOTAL: $40,000
Prin. Invest. Helliwell, R. A.; Park, C. G.
NASA Tech. Officer GSFC/Fellerman, K. D.; GSFC/Lidston, J. M.
CASE Category 13-Physics

NAS 5-24420 **Stanford University** 1293
Observation and correlative studies from ISEE-C data from the Stanford solar telescope

Period 02/17/78-07/23/81
Obligations FY78: $100,000 TOTAL: $100,000
Prin. Invest. Wilcox, J. M.
NASA Tech. Officer GSFC/Davis, M. A.
CASE Category 13-Physics

NAS 5-24479 **Stanford University** 1294
Soil moisture in relation to geologic structure and lithology in Northern California

Period 04/21/78-02/20/80
Obligations FY78: $17,445 TOTAL: $17,445
Prin. Invest. Rich, E. I.
NASA Tech. Officer GSFC/Broderick, J. C.
CASE Category 32-Geological Sci

NAS 5-25043 **Stanford University** 1295
Radiographic applications of spatial frequency multiplexing

Period 06/19/78-06/19/80
Obligations FY78: $30,000 TOTAL: $30,000
Prin. Invest. MacOvski, A.
NASA Tech. Officer GSFC/Ostrow, H.
CASE Category 19-Phys Sci, NEC

NAS 8-31571 **Stanford University** 1296
Structure and energy balance of coronal active regions

Period 02/01/76-05/31/77
Obligations FY78: TOTAL: $30,000
Prin. Invest. Walker, A. B., Jr.
NASA Tech. Officer MSFC/Bass, B. G.; MSFC/Hagyard, M.
CASE Category 13-Physics

NAS 8-32263 **Stanford University** 1297
Scientific data reduction and analysis activities ATM/S 056 experiment

Period 10/01/76-10/31/79
Obligations FY78: $100,000 TOTAL: $207,500
Prin. Invest. Underwood, J. H.
NASA Tech. Officer MSFC/Snoddy, W. C.
CASE Category 11-Astronomy

NAS 8-32355 **Stanford University** 1298
Gyro test of general relativity in a satellite

Period	*Obligations*	
03/11/77-11/25/78	FY78: $474,542	TOTAL: $689,667
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Everitt, C. W. DeBra, D. B. Fairbanks, W. M.	MSFC/Potter, R.	13-Physics

NAS 8-32605 **Stanford University** 1299
Superconducting bearings for application in cryogenic experiments in space

Period	*Obligations*	
08/01/77-03/31/79	FY78: $44,000	TOTAL: $86,901
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Everitt, C. W.	MSFC/Urban, E. W. MSFC/Decher, R.	13-Physics

NAS 8-32852 **Stanford University** 1300
Definition study of plasma depletion experiments during Spacelab mission 2

Period	*Obligations*	
10/01/77-05/31/78	FY78: $12,141	TOTAL: $12,141
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Darosa, A. V.	MSFC/Guynes, B. V. MSFC/Ise, R.	31-Atmos Sci

NAS 8-33012 **Stanford University** 1301
An investigation of the thermal structure of selected diffuse features in the soft X-ray/EUV background HEAO-1

Period	*Obligations*	
05/23/78-05/22/79	FY78: $16,904	TOTAL: $16,904
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Walker, A. B., Jr.	MSFC/Dailey, C. C.	11-Astronomy

NAS 9-15342 **Stanford University** 1302
A feasibility study of the reduction of the radiation belt population through controlled precipitation induced by VLF waves

Period	*Obligations*	
05/23/77-02/28/78	FY78:	TOTAL: $15,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Helliwell, R. A.	JSC/McCoy, J. E.	19-Phys Sci, NEC

NASW 2916 **Stanford University** 1303
Advanced studies in computer visual systems for exploratory vehicles

Period	*Obligations*	
03/01/76-09/30/78	FY78:	TOTAL: $90,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McCarthy, J.	HQ-RE/Pontious, C. E.	45-Elec Engr

NASW 3204 **Stanford University** 1304
A program of research and research internships in telecommunications and information technology

Period	*Obligations*	
07/01/78-06/30/79	FY78: $250,000	TOTAL: $250,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McAlister, J. F.	HQ-ET/Roberson, F. I. HQ-LU/Carter, C. H.	39-Env Sci, NEC

NCA 2-745706 **Stanford University** 1305
Adrenal modulary function in acute and chronic stress

Period	*Obligations*	
01/01/77-12/31/78	FY78: $15,000	TOTAL: $30,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Barchas, J. D.	ARC/Danellis, J. V.	51-Biology

NCA 2-745709 **Stanford University** 1306
Glucocorticoid effects on bone formation in vitro

Period	*Obligations*	
01/01/77-09/30/79	FY78: $20,000	TOTAL: $28,030
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Feldman, D.	ARC/Holton, E. M.	53-Other Medical

NCA 2-745715 **Stanford University** 1307
Dusty H II regions: Radiative transfer calculations and comparison with observations, and molecular clouds. Line transfer calculations

Period	*Obligations*	
05/15/77-05/14/79	FY78: $4,200	TOTAL: $14,200
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Petrosian, V.	ARC/Caroff, L. J. ARC/Erickson, E. F.	13-Physics

NCA 2-745717 **Stanford University** 1308
The catalytic activity of small platinum particles supported on single crystal aluminum oxide in low pressure reactions

Period	*Obligations*	
06/01/77-05/31/79	FY78: $7,387	TOTAL: $14,774
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Boudart, M.	ARC/Whiting, E. E.	13-Physics

NCA 2-745719 **Stanford University** 1309
Bacterial denitrification as a model for mixed ecosystem studies

Period	*Obligations*	
06/01/77-10/31/78	FY78:	TOTAL: $18,827
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Matin, A.	ARC/Hochstein, L.	51-Biology

NCA 2-745721 **Stanford University** 1310
Methods of calculating molecular interaction energies from data generated by the AIMS graphics system

Period	*Obligations*	
09/01/77-09/01/78	FY78: $14,000	TOTAL: $14,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Loew, G. B.	ARC/MacElroy, R. D.	51-Biology

NCA 2-745801 **Stanford University** 1311
Type II interferon and susceptibility to disease

Period	*Obligations*	
11/01/77-10/31/78	FY78: $19,340	TOTAL: $19,340
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Merigan, T.	ARC/Mandel, A. D.	53-Other Medical

NCA 2-745802 **Stanford University** 1312
Renal receptors and simulated weightlessness

Period	*Obligations*	
10/01/77-09/30/79	FY78: $18,535	TOTAL: $18,535
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Feldman, D.	ARC/Holton, E. M.	53-Other Medical

NCA 2-745803 **Stanford University** 1313
The investigation of an Auger electron microprobe; its capabilities, limitations, and applications

Period	*Obligations*	
10/01/77-09/30/79	FY78: $15,070	TOTAL: $15,070
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Spicer, W. E.	ARC/Whiting, E. E.	47-Materials Engr

NCA 2-745804 **Stanford University** 1314
Regulation of calcium metabolism in hypodynamic monkeys

Period	*Obligations*	
11/01/77-12/31/78	FY78: $19,800	TOTAL: $19,800
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Nagel, D. C.	ARC/Young, D. R.	53-Other Medical

NCA 2-745807 **Stanford University** 1315
Interaction studies of simple and reactive gases with transition metal films supported on insulating substrates

Period	*Obligations*	
11/15/77-11/14/78	FY78: $7,537	TOTAL: $7,537
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Pound, G. M.	ARC/Whiting, E. E.	47-Materials Engr

NCA 2-745811 **Stanford University** 1316
Analysis of coronal flow and wave phenomena during the solar occultation of the Earth-Viking radio link

Period	*Obligations*	
02/01/78-01/31/79	FY78: $10,000	TOTAL: $10,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Tyler, G. L.	ARC/Barnes, A.	11-Astronomy
Vesecky, J. F.		

NCA 2-745815 **Stanford University** 1317
Innovation performance within the NASA-stimulated segment of the U.S. computer industry: Towards a conceptual framework and some preliminary evidence

Period	*Obligations*	
04/01/78-02/28/79	FY78: $19,972	TOTAL: $19,972
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rosenberg, N.	ARC/Hornby, H.	99-Multi-Discip
Teubal, M.	ARC/Jones, J. L.	

NGL 05-020-007 **Stanford University** 1318
Guidance and control of flight vehicles

Period	*Obligations*	
08/17/72-08/14/81	FY78: $88,500	TOTAL: $1,449,564
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bryson, A. E., Jr.	ARC/Erzberger, H.	49-Engr, NEC
Franklin, G. F.	ARC/Creer, B. Y.	

NGL 05-020-008 **Stanford University** 1319
Investigation of experimental techniques for measurement of low frequency electromagnetic phenomena in the atmosphere

Period	*Obligations*	
09/01/61-02/28/81	FY78: $158,000	TOTAL: $1,592,443
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Helliwell, R. A.	HQ-ST/Cauffman, D. P.	13-Physics
	HQ-ST/Schmerling, E. R.	

NGL 05-020-014 **Stanford University** 1320
Theoretical & experimental radio & radar studies of lunar, planetary ionospheres, atmospheres, surfaces of sun and interplanetary medium

Period	*Obligations*	
04/30/63-09/30/79	FY78: $201,000	TOTAL: $3,109,574
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Eshleman, V. R.	HQ-SL/Murphy, R. E.	31-Atmos Sci
	HQ-ST/Brunk, W. E.	

NGL 05-020-103 **Stanford University** 1321
Investigation of laser dynamics, modulation and control by means of intra-cavity time varying perturbation

Period	*Obligations*	
05/16/66-03/31/80	FY78: $34,648	TOTAL: $1,122,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Harris, S. E.	HQ-RE/Fitzmaurice, M. W.	
Siegman, A. E.	GSFC/McElroy, J. H.	45-Elec Engr
Young, J. F.		

NGL 05-020-176 **Stanford University** 1322
Investigation of space-related whistler propagation phenomena in laboratory plasmas

Period	*Obligations*	
03/02/67-06/30/80	FY78: $90,000	TOTAL: $1,089,800
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Crawford, F. W.	HQ-ST/King, J. H.	13-Physics
	HQ-ST/Schmerling, E. R.	

NGL 05-020-243 **Stanford University** 1323
Refined methods of aeroelastic analysis and optimization

Period	*Obligations*	
08/14/67-08/31/81	FY78: $20,000	TOTAL: $150,630
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ashley, H.	LARC/Doggett, R. V., Jr.	41-Aero Engr

NGL 05-020-272 **Stanford University** **1324**
Theoretical study of the solar atmosphere and the structure of active regions

Period	*Obligations*	
06/07/68-09/31/78	FY78: $145,000	TOTAL: $870,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sturrock, P. A.	HQ-ST/Bohlin, J. D.	13-Physics

NGL 05-020-305 **Stanford University** **1325**
Evaluation of the cardiovascular system during various circulatory stresses

Period	*Obligations*	
09/17/68-11/30/80	FY78: $90,000	TOTAL: $1,319,032
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Harrison, D. C.	ARC/Sandler, H.	52-Clinical Med

NGL 05-020-582 **Stanford University** **1326**
Abiotic origins of optical activity

Period	*Obligations*	
04/18/72-04/03/79	FY78: $31,382	TOTAL: $251,178
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bonner, W. A.	HQ-SB/Young, R. S.	59-Life Sci, NEC

NGR 05-020-001 **Stanford University** **1327**
Ionospheric research utilizing satellite radio transmissions

Period	*Obligations*	
07/20/59-08/15/78	FY78: $40,000	TOTAL: $1,335,622
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
DaRosa, A. V.	HQ-ST/Taylor, W. W. HQ-ST/Schmerling, E. R.	13-Physics

NGR 05-020-004 **Stanford University** **1328**
Cytochemical studies of planetary microorganisms

Period	*Obligations*	
04/01/60-11/30/78	FY78: $110,000	TOTAL: $4,673,087
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lederberg, J. Levinthal, E. C.	HQ-SB/Young, R. S.	51-Biology

NGR 05-020-405 **Stanford University** **1329**
Electronic properties of hydrogen cyanide and its polymers of pyrroles and ferric porphyrins

Period	*Obligations*	
02/11/70-12/31/78	FY78: $17,000	TOTAL: $110,656
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Loew, G. H.	ARC/Chang, S.	12-Chemistry

NGR 05-020-435 **Stanford University** **1330**
Neuronal analysis of visual perception

Period	*Obligations*	
01/01/70-08/31/79	FY78:	TOTAL: $42,345
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Chow, K. L.	ARC/Mehler, W. R.	59-Life Sci, NEC

NGR 05-020-452 **Stanford University** **1331**
Instrumentation study development for high energy physics experiment in space

Period	*Obligations*	
06/09/70-12/31/78	FY78: $270,000	TOTAL: $1,802,941
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hofstadter, R.	HQ-SC/Opp, A. G. HQ-SC/Fishman, G. J.	11-Astronomy

NGR 05-020-456 **Stanford University** **1332**
Effects of altered gravitational stress on fluid balance and circulation of blood

Period	*Obligations*	
05/13/70-12/31/78	FY78: $45,000	TOTAL: $347,090
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Luetscher, J. A.	ARC/Danellis, J. V.	52-Clinical Med

NGR 05-020-559 **Stanford University** **1333**
Structure of solar magnetic and velocity fields

Period	*Obligations*	
03/22/72-09/31/78	FY78: $89,978	TOTAL: $547,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wilcox, J. M.	HQ-ST/Bohlin, J. D.	11-Astronomy

NGR 05-020-615 **Stanford University** **1334**
Ultrasonic Doppler measurement of renal artery blood flow

Period	*Obligations*	
05/26/72-11/30/79	FY78: $79,654	TOTAL: $615,154
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Meindl, J. D.	ARC/Sandler, H.	53-Other Medical

NGR 05-020-622 **Stanford University** **1335**
Computation of turbulent flows

Period	*Obligations*	
07/20/72-07/01/79	FY78: $78,571	TOTAL: $404,644
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Reynolds, W. C. Ferziger, J. H.	ARC/Rubesin, M. W. ARC/Lomax, H.	47-Materials Engr

NGR 05-020-634 **Stanford University** **1336**
Biomedical technology transfer

Period	*Obligations*	
12/07/72-12/31/78	FY78: $287,985	TOTAL: $1,241,488
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ream, A. K.	ARC/Sandler, H.	52-Clinical Med

NGR 05-020-649 **Stanford University** **1337**
Study of lunar and planetary surfaces

Period	*Obligations*	
03/06/73-12/31/78	FY78: $20,000	TOTAL: $107,170
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Howard, H. T.	HQ-SL/Dwornik, S. E. HQ-SL/Boyce, J. M.	32-Geological Sci

NGR 05-020-668 **Stanford University** **1338**
Magnetosphere structure and radiation mechanisms on pulsars
Period *Obligations*
11/01/73-10/31/78 FY78: $30,000 TOTAL: $128,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Sturrock, P. A. HQ-SC/Opp, A. G. 11-Astronomy

NGR 05-020-690 **Stanford University** **1339**
Miniature gas analysis systems
Period *Obligations*
09/01/73-11/30/78 FY78: $30,000 TOTAL: $222,632
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Angell, J. ARC/Carle, G. C. 53-Other Medical
ARC/Sandler, H.

NGR 05-020-710 **Stanford University** **1340**
Interaction of coatings w/heating environments
Period *Obligations*
01/01/74-12/31/78 FY78: $49,871 TOTAL: $207,566
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bates, C. ARC/Goldstein, H. E. 46-Mech Engr
ARC/Larson, H. K.

NGT 05-020-409 **Stanford University** **1341**
Summer faculty fellowship program in engineering systems design
Period *Obligations*
12/18/69-03/31/79 FY78: $129,420 TOTAL: $1,036,626
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Barfield, B. F. HQ-LU/Carter, C. H. 49-Engr, NEC

NGT 05-020-412 **Stanford University** **1342**
A summer program of NASA summer faculty fellowships
Period *Obligations*
12/16/69-03/31/79 FY78: $162,040 TOTAL: $1,267,710
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bershader, D. HQ-LU/Carter, C. H. 49-Engr, NEC

NGT 05-020-777 **Stanford University** **1343**
Support of specialized post-MD training in aerospace medicine
Period *Obligations*
07/01/76-08/31/78 FY78: TOTAL: $98,269
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Beard, R. R. HQ-LU/Carter, C. H. 59-Life Sci, NEC

NSG 1345 **Stanford University** **1344**
Reactive ablation of molybdenum by oxygen atoms
Period *Obligations*
10/01/76-12/31/78 FY78: $25,000 TOTAL: $50,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Madix, R. J. LARC/Outlaw, R. A. 47-Materials Engr
LARC/Melfi, L. T., Jr.

NSG 1381 **Stanford University** **1345**
The collision dynamics and energetics of hyperthermal reactive gases with chemical species absorbed on catalytic metal surfaces
Period *Obligations*
01/17/77-01/16/79 FY78: $12,500 TOTAL: $30,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Madix, R. J. LARC/Outlaw, R. A. 47-Materials Engr
LARC/Melfi, L. T., Jr.

NSG 1443 **Stanford University** **1346**
Generalized eigenvalue problem
Period *Obligations*
10/01/77-12/31/78 FY78: TOTAL: $26,095
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Golub, G. H. LARC/Shoosmith, J. N. 21-Mathematics
Wilkinson, J. H.

NSG 2007 **Stanford University** **1347**
Some experimental studies relating to airfoil noise
Period *Obligations*
01/15/74-11/30/78 FY78: $106,521 TOTAL: $1,102,927
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Karamcheti, K. ARC/Snyder, C. T. 19-Phys Sci, NEC
ARC/Hickey, D. H.

NSG 2020 **Stanford University** **1348**
Remote monitoring of physiologic effects of simulated space flight
Period *Obligations*
04/01/74-09/30/78 FY78: $15,000 TOTAL: $164,950
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Popp, R. L. ARC/Sandler, H. 52-Clinical Med

NSG 2085 **Stanford University** **1349**
Aerothermodynamic heat-shield environments
Period *Obligations*
09/15/75-09/14/79 FY78: $8,000 TOTAL: $142,098
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Rana, D. S. ARC/Howe, J. T. 42-Astro Engr
Prakash, G. ARC/Nachtsheim, P. R.

NSG 2092 **Stanford University** **1350**
In vivo determination of bone properties from mechanical measurements
Period *Obligations*
07/01/75-09/30/79 FY78: $20,900 TOTAL: $73,867
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Steele, C. R. ARC/Young, D. R. 53-Other Medical

NSG 2100 **Stanford University** **1351**
Control methods for aiding a pilot during STOL engine-out transients
Period *Obligations*
08/01/75-07/31/79 FY78: $21,000 TOTAL: $77,868
Prin. Invest. *NASA Tech. Officer* *CASE Category*
DeBra, D. B. ARC/Franklin, J. A. 41-Aero Engr
Bryson, A. E., Jr.

NSG 2121 **Stanford University** 1352
Preliminary design and computer simulation of a very large Fourier transform processor for the inter-stellar search system

Period	*Obligations*	
01/01/76-12/31/78	FY78: $10,000	TOTAL: $39,037
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Peterson, A. M.	ARC/Billingham, J.	49-Engr, NEC
Teague, C. C.	ARC/Wolpe, J. H.	

NSG 2132 **Stanford University** 1353
Study of lower body negative pressure

Period	*Obligations*	
02/01/76-12/31/78	FY78:	TOTAL: $30,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Harrison, D. C.	ARC/Sandler, H.	52-Clinical Med

NSG 2166 **Stanford University** 1354
Thermal protection material evaluation and diagnostic study of advanced high-power arc jets for planetary entry simulation

Period	*Obligations*	
07/01/76-06/30/79	FY78: $60,401	TOTAL: $168,704
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Baganoff, D.	ARC/Nachtsheim, P. R.	42-Astro Engr
Liu, G.		

NSG 2190 **Stanford University** 1355
Evaluation of the weight and aerodynamics methodology of the general aviation synthesis program for application to moderate size short haul transport aircraft

Period	*Obligations*	
11/01/76-10/31/78	FY78: $49,538	TOTAL: $69,266
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Shevell, R. S.	ARC/Galloway, T. L.	41-Aero Engr
	ARC/Schairer, E. T.	

NSG 2203 **Stanford University** 1356
Air cargo in an integrated transportation

Period	*Obligations*	
02/01/77-11/30/78	FY78: $44,233	TOTAL: $70,197
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Dajani, J. S.	ARC/Belsley, S. E.	41-Aero Engr

NSG 2214 **Stanford University** 1357
Develop ultrasonic indices for space shuttle passenger selection

Period	*Obligations*	
04/01/77-03/31/79	FY78: $60,000	TOTAL: $100,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Popp, R. L.	ARC/Sandler, H.	45-Elec Engr

NSG 2215 **Stanford University** 1358
Studies of the effects of forward flight on aircraft noise and its simulation

Period	*Obligations*	
03/01/77-02/28/80	FY78: $66,947	TOTAL: $375,950
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Karamcheti, K.	ARC/Soderman, P. T.	19-Phys Sci, NEC
Koutsoyannis, S. P.	ARC/Ahtye, W. F.	

NSG 2233 **Stanford University** 1359
Experimental studies relating to airfoil unsteady aerodynamics

Period	*Obligations*	
03/01/77-02/28/79	FY78: $193,430	TOTAL: $238,430
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Karamcheti, K.	ARC/Chapman, G. T.	41-Aero Engr
Bodapati, S.	ARC/Davis, S. S.	
Koutsoyannis, S. P.		

NSG 2246 **Stanford University** 1360
Spacelab infrared telescope pointing and control system

Period	*Obligations*	
07/01/77-09/30/78	FY78:	TOTAL: $43,106
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Powell, J. D.	ARC/Lorell, K. R.	49-Engr, NEC
	ARC/Young, L.	

NSG 2249 **Stanford University** 1361
High-resolution transmission electron microscope studies of small metal crystallites and surfaces

Period	*Obligations*	
10/01/77-10/31/79	FY78: $14,536	TOTAL: $29,073
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Heinemann, K.	ARC/Whiting, E. E.	13-Physics

NSG 2251 **Stanford University** 1362
Theoretical study of carbon monoxide molecule chemisorbed on iron and platinum surfaces

Period	*Obligations*	
09/15/77-09/15/79	FY78: $45,619	TOTAL: $64,189
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Pound, G. M.	ARC/Arnold, J. O.	47-Materials Engr
Spicer, W. E.	ARC/Stallcop, J. R.	
Laskowski, B. C.		

NSG 2254 **Stanford University** 1363
Stanford/Ames Joint Institute for Aeronautics and Acoustics, helicopter noise detection study

Period	*Obligations*	
07/01/77-12/31/78	FY78: $37,000	TOTAL: $62,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Karamcheti, K.	ARC/Schmitz, F. H.	39-Env Sci, NEC
Hersh, S.	ARC/Mosher, M.	

NSG 2255 **Stanford University** 1364
Analytical investigation of the flow field around a rotor blade

Period	*Obligations*	
07/15/77-07/14/78	FY78: $16,000	TOTAL: $28,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Karamcheti, K.	ARC/Peterson, V. L.	41-Aero Engr
Mehta, U. B.	ARC/Lomax, H.	

NSG 2258 **Stanford University** **1365**
Fundamental studies of unsteady turbulent boundary layers

Period | *Obligations*
09/01/77-02/28/79 | FY78: $69,835 | TOTAL: $119,835

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Reynolds, W. C. | ARC/McCroskey, W. J. | 41-Aero Engr
Parikh, P. | ARC/Carr, L. W.

NSG 2285 **Stanford University** **1366**
An investigation of the performance, application potential, and inherent limitations of a new microanalytical instrument: The Auger microprobe

Period | *Obligations*
12/01/77-11/30/78 | FY78: $61,786 | TOTAL: $61,786

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Pound, G. M. | ARC/Poppa, H. R. | 13-Physics
Spicer, W. E.
Heinemann, K.

NSG 2289 **Stanford University** **1367**
Applications of CARS spectroscopy to turbulence measurements

Period | *Obligations*
01/01/78-12/31/78 | FY78: $36,833 | TOTAL: $36,833

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Byer, R. L. | ARC/McKenzie, R. L. | 13-Physics

NSG 2292 **Stanford University** **1368**
Work on laser-electron beam interactions

Period | *Obligations*
01/01/78-12/31/78 | FY78: $50,000 | TOTAL: $50,000

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Pantell, R. H. | ARC/Billman, K. W. | 13-Physics
Piestrup, M. A.

NSG 2294 **Stanford University** **1369**
Effect of space flight as simulated by bed rest on drug disposition

Period | *Obligations*
01/01/78-12/31/78 | FY78: $60,000 | TOTAL: $60,000

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Harrison, D. C. | ARC/Danellis, J. V. | 53-Other Medical
Meffin, P. J. | ARC/Sandler, H.

NSG 2297 **Stanford University** **1370**
Studies on perceptual problems in aeronautics

Period | *Obligations*
01/01/78-12/31/78 | FY78: $116,094 | TOTAL: $116,094

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Karamcheti, K. | ARC/Nagel, D. C. | 41-Aero Engr
Treisman, M.
Ahumada, A.

NSG 2308 **Stanford University** **1371**
Dispersion relationships in turbulence with application to noise/turbulence diagnosis

Period | *Obligations*
03/01/78-02/28/79 | FY78: $62,842 | TOTAL: $62,842

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Karamcheti, K. | ARC/Chapman, G. T. | 41-Aero Engr
Tsuge, S. | ARC/Jones, R. T.
Ishikawa, N.

NSG 2317 **Stanford University** **1372**
Studies in rotor aerodynamics and noise

Period | *Obligations*
04/01/78-06/01/79 | FY78: $100,024 | TOTAL: $100,024

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Karamcheti, K. | ARC/Hickey, D. H. | 41-Aero Engr
ARC/Johnson, W. R.

NSG 2322 **Stanford University** **1373**
An advanced computerized system for analysis of eye-camera recordings of eye-pointing in helicopter pilots during real and simulated landings

Period | *Obligations*
05/01/78-04/30/79 | FY78: $75,000 | TOTAL: $75,000

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Suppes, P. | ARC/Wright, R. H. | 41-Aero Engr
ARC/Key, D. L.

NSG 2326 **Stanford University** **1374**
Investigation of the structural and electronic properties of small metal particles

Period | *Obligations*
07/01/78-07/01/79 | FY78: $38,883 | TOTAL: $38,883

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Heinemann, K. | ARC/Arnold, J. O. | 47-Materials Engr
Yang, C. Y. | ARC/Whiting, E. E.

NSG 3124 **Stanford University** **1375**
Heat transfer and hydrodynamic studies on a curved surface with full-coverage film cooling

Period | *Obligations*
10/01/76-10/31/79 | FY78: $147,940 | TOTAL: $212,770

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Johnston, J. P. | LERC/Gaugler, R. E. | 46-Mech Engr
Kays, W. M.
Moffat, R. J.

NSG 4002 **Stanford University** **1376**
Theoretical and experimental investigations in the control of aircraft

Period | *Obligations*
09/01/74-10/31/78 | FY78: | TOTAL: $260,000

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
DeBra, D. B. | DFRC/Edwards, J. W. | 41-Aero Engr
Ashley, H.
Bryson, A. E., Jr.

NSG 5131 **Stanford University** 1377
Spectroscopy of cosmic X-ray sources of the solar corona

Period	*Obligations*	
11/15/76-11/30/78	FY78: $160,000	TOTAL: $345,000

Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Walker, A. B., Jr.	GSFC/Bissell, E. E.	13-Physics
Stern, R. A.	HQ-ST/Bohlin, J. D.	

NSG 5132 **Stanford University** 1378
Research of elastically bent glass strips to produce high resolution X-ray and extreme ultraviolet optics

Period	*Obligations*	
10/15/76-01/15/78	FY78:	TOTAL: $57,000

Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Walker, A. B., Jr.	GSFC/Mangus, J. D.	19-Phys Sci, NEC
Underwood, J. H.	GSFC/Osantowski, J. F.	

NSG 5254 **Stanford University** 1379
Stochastic modeling of time-averaged equations for climate dynamics

Period	*Obligations*	
03/15/78-03/14/79	FY78: $90,900	TOTAL: $90,900

Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Spreiter, J. R.	GSFC/Halem, M.	31-Atmos Sci

NSG 7029 **Stanford University** 1380
Radar data from the moon

Period	*Obligations*	
04/01/74-12/31/77	FY78:	TOTAL: $201,266

Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Tyler, G. L.	HQ-SL/Goldstein, B. E.	32-Geological Sci

NSG 7092 **Stanford University** 1381
Energy release in solar flares based on OSO-5 data

Period	*Obligations*	
10/01/74-09/31/78	FY78: $40,000	TOTAL: $170,000

Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Petrosian, V.	HQ-ST/Bohlin, J. D.	11-Astronomy

NSG 7110 **Stanford University** 1382
Investigation of laser particle accelerators

Period	*Obligations*	
02/06/75-12/31/77	FY78:	TOTAL: $150,000

Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Pantell, R. H.	HQ-RR/Thom, K.	13-Physics
Piestrup, M. A.	ARC/Billman, K. W.	

NSG 7117 **Stanford University** 1383
A study of seismic velocity electrical conductivity and the state of the lunar crust

Period	*Obligations*	
03/01/75-02/28/77	FY78:	TOTAL: $76,520

Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Nur, A. M.	HQ-SL/Williams, R. J.	32-Geological Sci
	HQ-SL/Flinn, E. A.	

NSG 7204 **Stanford University** 1384
Theoretical analyses of relativistic gravitational experiments

Period	*Obligations*	
10/01/75-09/30/78	FY78: $18,500	TOTAL: $49,715

Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Will, C. M.	HQ-SC/Roman, N. G.	11-Astronomy
	HQ-SC/Rosendhal, J. D.	

NSG 7395 **Stanford University** 1385
Radar studies of the Martian surface

Period	*Obligations*	
03/15/78-03/14/79	FY78: $32,300	TOTAL: $32,300

Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Tyler, G. L.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Quaide, W. L.	

NAS 5-20079 **University of California - Berkeley** 1386
Energetic particles flux experiment for International Sun-Earth Explorer mother & daughter spacecraft

Period	*Obligations*	
05/23/74-12/31/81	FY78: $200,000	TOTAL: $1,298,090

Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Anderson, K. A.	GSFC/Davis, M. A.	13-Physics

NAS 5-20080 **University of California - Berkeley** 1387
Quasi-electric fields experiment for ISEE mother/daughter spacecraft

Period	*Obligations*	
05/21/74-10/30/79	FY78: $165,000	TOTAL: $905,000

Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mozer, F. S.	GSFC/Davis, M. A.	13-Physics

NAS 5-20995 **University of California - Berkeley** 1388
Isotopic composition of primary cosmic rays H thru Fe for ISEE C spacecraft

Period	*Obligations*	
03/19/75-07/30/80	FY78: $118,000	TOTAL: $1,395,000

Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Heckman, H.	GSFC/Gallagher, W. F.	13-Physics
	GSFC/Davis, M. A.	

NAS 5-22307 **University of California - Berkeley** 1389
Solar X-ray and interplanetary and solar electrons for the ISEE-C spacecraft

Period	*Obligations*	
04/11/75-12/31/83	FY78: $318,000	TOTAL: $1,401,000

Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Anderson, K. A.	GSFC/Gallagher, W. F.	32-Geological Sci

NAS 5-24105 **University of California - Berkeley** 1390
Cosmic background Explorer satellite mission definition study

Period	*Obligations*	
11/01/76-02/28/78	FY78: $15,003	TOTAL: $33,003

Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Alvarez, L. W.	GSFC/Mather, J. C.	11-Astronomy
Smoot, G.	GSFC/Muller, R.	

NAS 5-24165 **University of California - Berkeley** 1391
Experiment definition and integration study for accommodation of magnetic spectrometer payload on Spacelab/shuttle missions

Period	*Obligations*	
06/13/77-07/01/78	FY78:	TOTAL: $32,457
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Buffington, A.	GSFC/Campbell, C. E.	13-Physics

NAS 5-24166 **University of California - Berkeley** 1392
Experiment definition and integration study for accommodation of giant passive detector of exotic particles in cosmic rays on shuttle/Spacelab missions

Period	*Obligations*	
06/06/77-06/30/78	FY78: $1,681	TOTAL: $30,965
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Price, P. B. Shirk, E. K. Weitzmann, R.	GSFC/Campbell, C. E.	13-Physics

NAS 5-24189 **University of California - Berkeley** 1393
Study the feasibility of developing three telescopes in the 100-1000A range

Period	*Obligations*	
07/19/77-10/27/78	FY78: $19,020	TOTAL: $63,752
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bowyer, C. S.	GSFC/Willis, S. E.	11-Astronomy

NAS 5-24445 **University of California - Berkeley** 1394
Development of instrumentation for an extreme ultraviolet Explorer

Period	*Obligations*	
02/28/78-02/01/80	FY78: $294,679	TOTAL: $294,679
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bowyer, C. S.	GSFC/Willis, S. E. GSFC/Townsend, M. R.	11-Astronomy

NAS 5-25007 **University of California - Berkeley** 1395
Microwave and theoretical studies for Cosmic Background Explorer (COBE) satellite

Period	*Obligations*	
03/01/78-01/01/80	FY78: $85,997	TOTAL: $85,997
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Smoot, G.	GSFC/Nice, D. A. GSFC/Donohoe, M. J.	11-Astronomy

NAS 5-25070 **University of California - Berkeley** 1396
Provide engineering and consulting services to the space telescope instrument science team

Period	*Obligations*	
05/20/78-01/31/84	FY78: $27,000	TOTAL: $27,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
King, I.	GSFC/Leckrone, D.	11-Astronomy

NAS 8-29603 **University of California - Berkeley** 1397
Trans-uranic cosmic ray flight experiment

Period	*Obligations*	
03/13/73-11/01/77	FY78:	TOTAL: $300,738
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Price, P. B.	MSFC/Ondrak, B. T.	13-Physics

NAS 8-31346 **University of California - Berkeley** 1398
Feasibility of coherent and incoherent backscatter experiments from the AMPS laboratory

Period	*Obligations*	
03/01/75-12/21/76	FY78:	TOTAL: $29,996
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mozer, F. S.	MSFC/Roberts, W. T. MSFC/Chappell, C. R.	19-Phys Sci, NEC

NAS 8-32577 **University of California - Berkeley** 1399
Spacelab mission 1 exp. 95 far UV observations using the Faust instrument on the first Spacelab mission

Period	*Obligations*	
05/10/77-09/01/81	FY78: $106,267	TOTAL: $161,085
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bowyer, C. S. Lampton, M.	MSFC/Marmann, R.	11-Astronomy

NAS 8-33011 **University of California - Berkeley** 1400
High energy X-ray observation of clusters of galaxies

Period	*Obligations*	
06/01/78-06/07/79	FY78: $22,675	TOTAL: $22,675
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Anderson, K. A.	MSFC/Dailey, C. C.	11-Astronomy

NAS 9-14565 **University of California - Berkeley** 1401
Study development of improved photointerpretative techniques to wheat identification

Period	*Obligations*	
05/15/75-11/14/78	FY78: $285,000	TOTAL: $906,203
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Colwell, R. N.	JSC/Garcia, J. G.	39-Env Sci, NEC

NCA 2-50703 **University of California - Berkeley** 1402
Proteolytic conversions of pituitary growth hormones

Period	*Obligations*	
02/01/77-01/31/79	FY78: $18,450	TOTAL: $34,700
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Nicholl, C.	ARC/Ellis, S.	53-Other Medical

NCA 2-50704 **University of California - Berkeley** 1403
Microwave systems for in-situ measurement of wetness of snow and earth

Period	*Obligations*	
01/10/77-01/09/79	FY78: $15,000	TOTAL: $25,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Angelakos, D. J.	ARC/Linlor, W. I.	39-Env Sci, NEC

2-50705 University of California - Berkeley 1404
High resolution surface analysis for materials science studies
Period: 05/01/77-04/30/79 Obligations: FY78: TOTAL: $10,450
Prin. Invest.: Bier, M.; Barstow, L. E.; Jewett, W. R.
NASA Tech. Officer: ARC/Poppa, H. R.
CASE Category: 13-Physics

2-50710 University of California - Berkeley 1405
On the modelling of extraterrestrial ecosystems
Period: 09/15/77-09/14/79 Obligations: FY78: $4,390 TOTAL: $23,000
Prin. Invest.: Spear, R.; Auslander, D.
NASA Tech. Officer: ARC/MacElroy, R. D.
CASE Category: 59-Life Sci, NEC

2-50711 University of California - Berkeley 1406
Excitation of interstellar H2O masers via the collision of protostellar fragments and observations of interstellar OH masers achieving extreme frequency resolution
Period: 09/09/77-10/31/78 Obligations: FY78: $19,807 TOTAL: $19,807
Prin. Invest.: Silk, J. I.; Welch, W. J.
NASA Tech. Officer: ARC/Caroff, L. J.; ARC/Black, D. C.
CASE Category: 11-Astronomy

2-50801 University of California - Berkeley 1407
Utilization of light-energy by halobacterium halobium
Period: 10/01/77-09/30/79 Obligations: FY78: $17,500 TOTAL: $17,500
Prin. Invest.: Packer, L.
NASA Tech. Officer: ARC/Lanyi, J. K.
CASE Category: 51-Biology

2-50802 University of California - Berkeley 1408
Studies of radiative transfer in planetary atmospheres
Period: 11/01/77-11/01/78 Obligations: FY78: $13,608 TOTAL: $13,608
Prin. Invest.: Cuzzi, J. N.; Welch, W. J.
NASA Tech. Officer: ARC/Pollack, J. B.
CASE Category: 31-Atmos Sci

2-50803 University of California - Berkeley 1409
Predictions of motion sickness susceptibility based on human autonomic response pattern data: A mathematical model
Period: 05/01/78-04/30/79 Obligations: FY78: $14,300 TOTAL: $14,300
Prin. Invest.: Strohman, R. C.
NASA Tech. Officer: ARC/Cowings, P. S.
CASE Category: 61-Biol Aspects

05-003-003 University of California - Berkeley 1410
Study of extraterrestrial life using reflection spectra as a basis
Period: 08/01/60-10/31/79 Obligations: FY78: $125,000 TOTAL: $3,883,081
Prin. Invest.: Calvin, M.; Weaver, H.; Burlingame, A. L.
NASA Tech. Officer: HQ-SB/Young, R. S.
CASE Category: 32-Geological Sci

NGL 05-003-017 University of California - Berkeley 1411
Investigation of high energy solar flare radiation & trapped radiation, including balloon-borne & sounding rocket tests of prototype detectors
Period: 04/08/63-01/31/81 Obligations: FY78: $40,000 TOTAL: $1,912,942
Prin. Invest.: Anderson, K. A.
NASA Tech. Officer: HQ-ST/King, J. H.; HQ-ST/Schmerling, E. R.
CASE Category: 19-Phys Sci, NEC

NGL 05-003-272 University of California - Berkeley 1412
Research on radiation physics
Period: 03/01/68-02/28/81 Obligations: FY78: $78,841 TOTAL: $1,111,380
Prin. Invest.: Townes, C. H.
NASA Tech. Officer: HQ-SC/Boggess, N. W.; HQ-SC/Roman, N. G.
CASE Category: 11-Astronomy

NGL 05-003-286 University of California - Berkeley 1413
Orbiting spacecraft infrared spectrometer development for terrestrial and laboratory study of planetary atmospheres
Period: 08/08/68-08/31/79 Obligations: FY78: TOTAL: $1,004,004
Prin. Invest.: Pimental, G. C.
NASA Tech. Officer: HQ-SL/Fellows, R. F.; HQ-SL/Brunk, W. E.
CASE Category: 31-Atmos Sci

NGL 05-003-404 University of California - Berkeley 1414
Integrated study of earth resources in the State of California using remote sensing techniques
Period: 07/13/70-04/30/79 Obligations: FY78: $40,000 TOTAL: $4,093,000
Prin. Invest.: Colwell, R. N.
NASA Tech. Officer: HQ-ET/Vitale, J. A.; ARC/Arno, R. D.
CASE Category: 39-Env Sci, NEC

NGL 05-003-409 University of California - Berkeley 1415
Lunar sample analysis
Period: 01/26/71-01/31/81 Obligations: FY78: $138,480 TOTAL: $898,850
Prin. Invest.: Reynolds, J. H.
NASA Tech. Officer: JSC/Harris, J. W.
CASE Category: 13-Physics

NGL 05-003-410 University of California - Berkeley 1416
Lunar sample analysis
Period: 02/22/71-01/31/79 Obligations: FY78: TOTAL: $625,007
Prin. Invest.: Price, P. B.
NASA Tech. Officer: JSC/Harris, J. W.
CASE Category: 12-Chemistry

NGL 05-003-497 University of California - Berkeley 1417
Research in space sciences
Period: 04/05/72-03/31/81 Obligations: FY78: $250,000 TOTAL: $1,550,000
Prin. Invest.: Anderson, K. A.
NASA Tech. Officer: HQ-LU/Carter, C. H.
CASE Category: 99-Multi-Discip

NGR 05-003-239 **University of California - Berkeley** **1418**
Auroral zone rocket studies of electric fields and precipitating particles

Period	*Obligations*	
08/26/68-11/30/78	FY78: $120,000	TOTAL: $1,097,811
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mozer, F. S.	HQ-ST/Bissell, E. E.	13-Physics
Anderson, K. A.	HQ-ST/Schmerling, E. R.	

NGR 05-003-376 **University of California - Berkeley** **1419**
High resolution studies of cosmic rays and solar particles

Period	*Obligations*	
04/16/71-11/01/77	FY78: $110,000	TOTAL: $628,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Price, P. B.	HQ-SC/Sofia, S.	11-Astronomy
	HQ-SC/Opp, A. G.	

NGR 05-003-450 **University of California - Berkeley** **1420**
Study of X-ray emission from galactic and extragalactic sources with emphasis on soft and ultra-soft wavelengths

Period	*Obligations*	
05/28/71-10/31/78	FY78: $140,453	TOTAL: $1,013,656
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bowyer, C. S.	GSFC/Bissell, E. E.	11-Astronomy
	HQ-SC/Opp, A. G.	

NGR 05-003-451 **University of California - Berkeley** **1421**
Research in aeronautics & air transportation

Period	*Obligations*	
03/30/71-03/14/79	FY78: $82,000	TOTAL: $570,850
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Holt, M.	ARC/Chapman, G. T.	41-Aero Engr
Talbot, L.		

NGR 05-003-452 **University of California - Berkeley** **1422**
Infrared spectra of planetary atmospheres

Period	*Obligations*	
02/18/72-06/30/79	FY78: $50,000	TOTAL: $315,340
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Townes, C. H.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Murphy, R. E.	

NGR 05-003-460 **University of California - Berkeley** **1423**
The chemistry of living systems

Period	*Obligations*	
07/21/71-10/31/78	FY78: $75,000	TOTAL: $568,750
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Jukes, J. H.	HQ-SB/Young, R. S.	12-Chemistry

NGR 05-003-471 **University of California - Berkeley** **1424**
Sociopolitical assessment of advanced technology

Period	*Obligations*	
05/21/71-06/30/79	FY78: $10,973	TOTAL: $319,309
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
LaPorte, T. R.	ARC/Tanner, T. A., Jr.	79-Soc Sci, NEC

NGR 05-003-511 **University of California - Berkeley** **1425**
Spectrographic observation of infrared lines

Period	*Obligations*	
03/01/73-10/31/78	FY78: $7,000	TOTAL: $252,022
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Townes, C. H.	ARC/Haughney, L. C.	11-Astronomy

NGR 05-003-513 **University of California - Berkeley** **1426**
Heavy ion fragment experiments at the bevatron

Period	*Obligations*	
10/01/73-09/30/77	FY78: $140,000	TOTAL: $635,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Heckman, H. H.	HQ-SC/Sofia, S.	11-Astronomy
	HQ-SC/Opp, A. G.	

NGR 05-003-553 **University of California - Berkeley** **1427**
High energy primary cosmic radiation measured by superconducting magnetic spectrometer

Period	*Obligations*	
05/10/73-12/31/78	FY78: $250,000	TOTAL: $1,550,164
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Alvarez, L. W.	HQ-SC/Fishman, G. J.	11-Astronomy
	HQ-SC/Opp, A. G.	

NGR 05-003-562 **University of California - Berkeley** **1428**
Research on iron base alloys with superior strength and fracture toughness for use at cryogenic temperatures

Period	*Obligations*	
08/15/73-10/15/77	FY78:	TOTAL: $122,184
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Morris, J. W.	LERC/Stephens, J. R.	47-Materials Engr

NGR 05-003-578 **University of California - Berkeley** **1429**
Theoretical X-ray and gamma-ray astronomy

Period	*Obligations*	
08/01/73-08/31/78	FY78:	TOTAL: $153,517
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Silk, J. I.	HQ-SC/Roman, N. G.	11-Astronomy
	HQ-SC/Rosendhal, J. D.	

NSG 2026 **University of California - Berkeley** **1430**
Fire testing of aircraft interiors

Period	*Obligations*	
05/01/74-09/30/78	FY78: $30,000	TOTAL: $248,400
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Williamson, R. B.	ARC/Kourtides, D. A.	44-Civil Engr
Hasegawa, H.	ARC/Parker, J. A.	

NSG 2127 **University of California - Berkeley** **1431**
An investigation of sources of information on short haul air passengers

Period	*Obligations*	
01/01/76-03/31/79	FY78: $49,290	TOTAL: $102,338
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kanafani, A.	ARC/Belsley, S. E.	41-Aero Engr

NSG 2151 **University of California - Berkeley** **1432**
Infrared and optical tunneling junctions

Period	*Obligations*	
05/01/76-07/14/79	FY78: $45,000	TOTAL: $135,427
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gustafson, T. K.	ARC/Billman, K. W.	13-Physics

NSG 2207 **University of California - Berkeley** **1433**
Determining the usefulness of remote sensing for estimating agricultural water demand in California

Period	*Obligations*	
01/01/77-12/31/78	FY78: $75,000	TOTAL: $160,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Colwell, R. N.	ARC/Bauer, E.	39-Env Sci, NEC
Estes, J. E.		
Wall, S.		

NSG 2243 **University of California - Berkeley** **1434**
User-driven remote sensing applications: Dynamics of the Pacific Northwest experience

Period	*Obligations*	
06/01/77-09/30/78	FY78: $75,000	TOTAL: $98,260
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Colwell, R. N.	ARC/Padrick, B. D.	19-Phys Sci, NEC
Hoos, I.	ARC/Lumb, D. R.	

NSG 2271 **University of California - Berkeley** **1435**
Selected target search for extraterrestrial observations using very long base interferometry techniques and pattern recoginition studies

Period	*Obligations*	
10/01/77-03/01/79	FY78: $16,013	TOTAL: $16,013
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Welch, W. J.	ARC/Billingham, J.	99-Multi-Discip
Bowyer, C. S.	ARC/Stull, M. A.	

NSG 2280 **University of California - Berkeley** **1436**
Bolometers for space applications; tests of grid polarizers

Period	*Obligations*	
11/01/77-01/31/79	FY78: $15,000	TOTAL: $15,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Richards, P. L.	ARC/Vorreiter, J. W.	11-Astronomy
	ARC/Brooks, W.	

NSG 3028 **University of California - Berkeley** **1437**
Techniques for stabilization of lean combustion systems

Period	*Obligations*	
07/01/74-02/01/79	FY78:	TOTAL: $337,182
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Dailey, J. W.	LERC/Marek, C. J.	46-Mech Engr
Oppenheim, A. K.	LERC/Diehl, L. A.	
Sawyer, R. F.		

NSG 3227 **University of California - Berkeley** **1438**
Study of the mechanism of flashback

Period	*Obligations*	
10/01/78-10/01/81	FY78: $122,445	TOTAL: $122,445
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Oppenheim, A. K.	LERC/Marek, C. J.	41-Aero Engr

NSG 5093 **University of California - Berkeley** **1439**
Microwave scattering properties of snow fields

Period	*Obligations*	
02/01/76-07/31/78	FY78:	TOTAL: $61,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Angelakos, D. J.	GSFC/Chang, T. C.	49-Engr, NEC

NSG 5164 **University of California - Berkeley** **1440**
Simultaneous X-ray and optical observations of the 'SCO-X-1 like' X-ray sources

Period	*Obligations*	
03/14/77-03/13/78	FY78:	TOTAL: $9,913
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bowyer, C. S.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5201 **University of California - Berkeley** **1441**
Theoretical studies in space astronomy

Period	*Obligations*	
09/01/77-08/31/78	FY78:	TOTAL: $1,496
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Shull, J. M.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5227 **University of California - Berkeley** **1442**
Rotation modulation collimator experiment studies SAS-3

Period	*Obligations*	
02/01/78-01/31/79	FY78: $6,264	TOTAL: $6,264
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bowyer, C. S.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5256 **University of California - Berkeley** **1443**
Water quality mapping and location of entrapment zone in San Francisco Bay delta

Period	*Obligations*	
03/15/78-03/14/79	FY78: $20,000	TOTAL: $20,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Colwell, R. N.	GSFC/Kim, H. H.	33-Oceanography
Knight, A. W.		

NSG 5292 **University of California - Berkeley** **1444**
Simultaneous X-ray and optical observations

Period	*Obligations*	
08/01/78-07/31/79	FY78: $9,500	TOTAL: $9,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bowyer, C. S.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 7127 **University of California - Berkeley** **1445**
Map lunar surface remanent magenetic fields and to develop the theory of solar winds cavity

Period	*Obligations*	
03/25/75-02/28/79	FY78: $43,140	TOTAL: $203,656
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Anderson, K. A.	HQ-SL/Quaide, W. L. HQ-SL/French, B. E.	39-Env Sci, NEC

NSG 7152 **University of California - Berkeley** **1446**
Studies of solar system objects with the new hat creek millimeter wave length radio interferometer

Period	*Obligations*	
07/01/75-10/31/78	FY78: $32,495	TOTAL: $107,961
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Welch, W. J.	HQ-SL/Brunk, W. E. HQ-SL/Quaide, W. L.	11-Astronomy

NSG 7205 **University of California - Berkeley** **1447**
Far infrared all-sky survey

Period	*Obligations*	
02/01/76-03/31/79	FY78: $33,500	TOTAL: $83,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Richards, P. L.	HQ-SC/Boggess, N. W. HQ-SC/Roman, N. G.	11-Astronomy

NSG 7220 **University of California - Berkeley** **1448**
Remote sensing to selected problems within the State of California

Period	*Obligations*	
05/01/76-04/30/81	FY78: $255,000	TOTAL: $590,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Colwell, R. N.	HQ-ET/Vitale, J. A.	39-Env Sci, NEC

NSG 7262 **University of California - Berkeley** **1449**
Primate hemodynamics and metabolism under conditions of weightlessness

Period	*Obligations*	
07/01/76-09/30/78	FY78: $60,000	TOTAL: $151,200
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Pace, N.	HQ-SB/Halstead, T. W. HQ-SB/Geib, D. S.	51-Biology

NSG 7277 **University of California - Berkeley** **1450**
Adapt and evaluate a ranicon particle detection system for the experiment to measure lunar magnetic fields using the electron reflection method on the terrestrial bodies orbiter mission

Period	*Obligations*	
09/01/76-03/31/78	FY78:	TOTAL: $41,430
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lin, R. P.	HQ-SL/Smith, M. J. HQ-SL/Quaide, W. A.	31-Atmos Sci

NSG 7336 **University of California - Berkeley** **1451**
Gravity, body mass, and composition and metabolic rate

Period	*Obligations*	
12/01/76-11/30/78	FY78: $50,000	TOTAL: $100,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Pace, N.	HQ-SB/Halstead, T. W. HQ-SB/Geib, D. S.	51-Biology

NSG 7401 **University of California - Berkeley** **1452**
Theoretical study of Equatorial F region irregularities

Period	*Obligations*	
11/01/77-10/31/79	FY78: $49,874	TOTAL: $49,874
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mozer, F. S.	HQ-ST/Kaiser, M. L. HQ-ST/Schmerling, E. R.	19-Phys Sci, NEC

NSG 7455 **University of California - Berkeley** **1453**
Cosmic microwave background isotropy research

Period	*Obligations*	
04/15/78-04/14/79	FY78: $29,992	TOTAL: $29,992
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Smoot, G.	HQ-SC/Boggess, N. W. HQ-SC/Roman, N. G.	11-Astronomy

NAS 5-22964 **University of California - Davis** **1454**
Nimbus-G experiment team support for earth radiation budget

Period	*Obligations*	
02/18/76-02/18/79	FY78: $34,588	TOTAL: $62,187
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Coulson, K. L.	GSFC/Nelson, D.	41-Aero Engr

NAS 9-15203 **University of California - Davis** **1455**
Bone density by photon absorptiometry

Period	*Obligations*	
01/01/77-03/31/78	FY'78:	TOTAL: $40,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Vogel, J. M.	JSC/Rambaut, P. C.	53-Other Medical

NCA 2-180703 **University of California - Davis** **1456**
Human performance under selected environmental stresses: Effects of heat acclimation and physical training on the body fluids and temperature responses during heat stress

Period	*Obligations*	
04/01/77-12/31/78	FY78: $12,220	TOTAL: $19,420
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bernauer, E. M.	ARC/Greenleaf, J. E.	53-Other Medical

NCA 2-180803 **University of California - Davis** **1457**
A comprehensive analysis of human performance requirements for future space flight

Period	*Obligations*	
04/01/78-09/30/78	FY78: $4,596	TOTAL: $4,596
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Harrison, A. A.	ARC/Connors, M. M.	79-Soc Sci, NEC

NCA 2-180804 **University of California - Davis** **1458**
Determination of aeolian surface material flux rates on Earth and Mars

Period	*Obligations*	
06/15/78-06/15/79	FY78: $18,500	TOTAL: $18,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
White, B. R.	ARC/Pollack, J. B.	46-Mech Engr

NGL 05-004-008 **University of California - Davis** **1459**
Physiological effects of chronic acceleration

Period	*Obligations*	
03/01/65-01/31/79	FY78:	TOTAL: $815,797
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Smith, A. H.	ARC/Oyama, J.	51-Biology

NSG 2234 **University of California - Davis** **1460**
Thermoregulation in rats: Effects of hypergravity and norepinephrine

Period	*Obligations*	
07/01/77-06/30/79	FY78: $30,000	TOTAL: $50,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Horowitz, B. A.	ARC/Oyama, J.	51-Biology
Horowitz, J. M.		

NSG 2256 **University of California - Davis** **1461**
Turbulent transport modeling of separating and reattaching shear flow

Period	*Obligations*	
10/01/77-10/01/79	FY78: $9,242	TOTAL: $57,742
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Launder, B.	ARC/Marvin, J. G.	41-Aero Engr
Sindir, M.	ARC/Rubesin, M. W.	

NSG 5092 **University of California - Davis** **1462**
Use of remote data in hydrologic engineering models

Period	*Obligations*	
02/01/76-06/30/79	FY78: $50,000	TOTAL: $180,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Algazi, V. R.	GSFC/Rango, A.	39-Env Sci, NEC
	GSFC/Salomonson, V. V.	

NGR 05-041-012 **University of California - Irvine** **1463**
Diagnosis of preclinical viral illness and prophylaxis against viral disease

Period	*Obligations*	
07/13/71-11/30/78	FY78: $35,000	TOTAL: $244,342
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Tilles, J. G.	ARC/Mandel, A. D.	52-Clinical Med

NSG 7208 **University of California - Irvine** **1464**
Gas phase reactions of chlorine and fluorine compound of interest for stratospheric chemistry

Period	*Obligations*	
01/01/76-09/30/79	FY78: $78,849	TOTAL: $254,111
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Molina, M. J.	HQ-ST/Newton, G. P.	31-Atmos Sci
	HQ-ST/Tilford, S. G.	

NSG 7375 **University of California - Irvine** **1465**
Coronal plasma structures

Period	*Obligations*	
06/01/77-09/30/78	FY78: $36,000	TOTAL: $44,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
VanHoven, G.	HQ-ST/Bohlin, J. D.	13-Physics
	HQ-ST/Timothy, A. F.	

NSG 7472 **University of California - Irvine** **1466**
Research on some properties of nearly perfect crystals at very low temperatures

Period	*Obligations*	
07/01/78-06/30/79	FY78: $10,000	TOTAL: $10,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wallis, R. F.	HQ-RR/Henry, W.	13-Physics

NAS 2-9128 **University of California - Los Angeles** **1467**
Interdisciplinary scientist, Pioneer/Venus program

Period	*Obligations*	
02/09/76-10/01/78	FY78:	TOTAL: $1,759
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kaula, W. M.	ARC/Hall, C. F.	11-Astronomy
	ARC/Porter, D. L.	

NAS 2-9131 **University of California - Los Angeles** **1468**
Interdisciplinary scientist, Pioneer/Venus program

Period	*Obligations*	
02/09/76-10/01/78	FY78:	TOTAL: $2,883
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Schubert, G.	ARC/Hall, C. F.	11-Astronomy
	ARC/Porter, D. L.	

NAS 2-9491 **University of California - Los Angeles** **1469**
Pioneer/Venus data analysis of magnetic fields experiment

Period	*Obligations*	
08/01/77-09/30/78	FY78: $10,000	TOTAL: $70,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Russell, C. T.	ARC/Hall, C. F.	31-Atmos Sci

NAS 5-20064 **University of California - Los Angeles** **1470**
Magnetic field investigation for ISEE mother/daughter spacecraft

Period	*Obligations*	
06/05/74-12/30/81	FY78: $193,962	TOTAL: $829,968
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Russell, C. T.	GSFC/Davis, M. A.	13-Physics

NAS 5-23702 **University of California - Los Angeles** **1471**
ATS-6 environmental measurements experiment data reduction and analysis

Period	*Obligations*	
10/29/76-11/30/78	FY78: $50,000	TOTAL: $102,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Coleman, P. J., Jr.	GSFC/Wende, C. D.	39-Env Sci, NEC

NAS 5-25039 **University of California - Los Angeles** **1472**
Theory formulation and analysis support for the Dynamic Explorer (DE) project

Period	*Obligations*	
08/08/78-02/28/83	FY78: $10,000	TOTAL: $10,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Coroniti, F. V.	GSFC/Hoffman, R. A.	13-Physics

NAS 6-2463 **University of California - Los Angeles** **1473**
GEOS-C research into tectonics of ocean regions

Period	*Obligations*	
04/18/74-10/31/77	FY78:	TOTAL: $148,096
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kaula, W. M.	WFC/Stanley, H. R.	33-Oceanography
Lingenfelter, R. E.	WFC/Rossi, L. C.	

NAS 8-32571 **University of California - Los Angeles** **1474**
Tethered sub-satellite study

Period	*Obligations*	
05/02/77-10/14/78	FY78: $20,000	TOTAL: $35,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Coleman, P. J., Jr.	MSFC/Page, M. A.	32-Geological Sci
	MSFC/Siebel, M. P.	

NAS 8-33115 **University of California - Los Angeles** **1475**
Experiment for materials processing in space, entitled: Ultra-pure metals preparation in space

Period	*Obligations*	
08/07/78-12/07/79	FY78: $67,118	TOTAL: $67,118
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bunshah, R. F.	MSFC/Williams, J. R.	47-Materials Engr
	MSFC/Oran, W. A.	

NCA 2-390801 **University of California - Los Angeles** **1476**
Studies on rat b-lipotropin

Period	*Obligations*	
10/01/77-10/01/79	FY78: $15,950	TOTAL: $31,350
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Parlow, A.	ARC/Ellis, S.	61-Biol Aspects

NCA 2-390803 **University of California - Los Angeles** **1477**
Low expansion copper aluminosilicate glasses and glass-ceramics

Period	*Obligations*	
05/01/78-04/30/79	FY78: $14,888	TOTAL: $14,888
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
MacKenzie, J. D.	ARC/Goldstein, H. E.	47-Materials Engr

NGL 05-007-002 **University of California - Los Angeles** **1478**
Theoretical evaluation of the internal structures and atmospheres of planets and the moon

Period	*Obligations*	
01/01/62-12/31/80	FY78: $71,024	TOTAL: $834,185
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kaula, W. M.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. E.	

NGL 05-007-004 **University of California - Los Angeles** **1479**
Theoretical & experimental investigations of particles & fields in space, including construction of prototype instrumentation

Period	*Obligations*	
03/01/62-09/30/79	FY78: $165,000	TOTAL: $2,615,554
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Coleman, P. J., Jr.	HQ-ST/Cauffman, D. P.	39-Env Sci, NEC
	HQ-ST/Schmerling, E. R.	

NGL 05-007-190 **University of California - Los Angeles** **1480**
Theoretical space plasma physics

Period	*Obligations*	
06/27/68-09/30/80	FY78: $60,000	TOTAL: $443,380
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kennel, C. F.	HQ-ST/King, J. H.	19-Phys Sci, NEC
	HQ-ST/Schmerling, E. R.	

NGL 05-007-367 **University of California - Los Angeles** **1481**
Lunar sample analysis

Period	*Obligations*	
06/30/72-03/31/79	FY78: $88,000	TOTAL: $498,570
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wasson, J. T.	JSC/Harris, J. W.	12-Chemistry

NGR 05-007-221 **University of California - Los Angeles** **1482**
Nature and changes of organic matter in deep ocean cores

Period	*Obligations*	
08/08/69-12/31/78	FY78: $61,845	TOTAL: $526,462
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kaplan, I. R.	HQ-SB/Young, R. S.	32-Geological Sci

NGR 05-007-276 **University of California - Los Angeles** **1483**
Data analysis on the OGO-3 and OGO-4 search coil magnetometers

Period	*Obligations*	
04/03/70-04/30/79	FY78:	TOTAL: $180,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Holzer, R. E.	HQ-ST/Taylor, W. W.	13-Physics

NGR 05-007-289 **University of California - Los Angeles** **1484**
Lunar sample analysis

Period	*Obligations*	
12/29/70-01/31/79	FY78: $78,000	TOTAL: $579,580
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kaplan, I. R.	JSC/Harris, J. W.	13-Physics

NGR 05-007-317 **University of California - Los Angeles** **1485**
Photogeologic interpretation of Mariner/Mars 1969 imagery

Period	*Obligations*	
03/09/71-03/14/79	FY78: $23,500	TOTAL: $129,471
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Schubert, G.	HQ-SL/Dwornik, S. E.	32-Geological Sci
	HQ-SL/Boyce, J. M.	

NGR 05-007-328 University of California - Los Angeles 1486
Numerical modeling of the global atmosphere and the world oceans

Period	*Obligations*	
08/15/71-11/30/78	FY78: $20,000	TOTAL: $390,649
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mintz, Y.	GSFC/Halem, M.	31-Atmos Sci
Arakawa, A.		

NGR 05-007-329 University of California - Los Angeles 1487
Elemental variations in genetically related meteorites

Period	*Obligations*	
04/27/71-02/28/79	FY78: $54,177	TOTAL: $354,995
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wasson, J. T.	HQ-SL/French, B. M.	32-Geological Sci
Rambaldi, E.	HQ-SL/Quaide, W. L.	
Depaolo, D. J.		

NGR 05-007-351 University of California - Los Angeles 1488
Correlative studies of Apollo 15 and 16 satellite magnetometer data with the Explorer 35 and lunar surface magnetometer data

Period	*Obligations*	
05/25/72-01/31/79	FY78: $99,495	TOTAL: $622,274
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Coleman, P. J., Jr.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. E.	

NGR 05-007-407 University of California - Los Angeles 1489
Paleobiologic studies of the antiquity and precambrian evolution of life

Period	*Obligations*	
04/10/73-05/31/79	FY78: $38,012	TOTAL: $193,847
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Schopf, J. W.	HQ-SB/Young, R. S.	32-Geological Sci

NGR 05-007-414 University of California - Los Angeles 1490
Aeroelastic stability of helicopter blades in hover and in forward flight using various unsteady aerodynamic theories

Period	*Obligations*	
09/01/73-11/30/78	FY78: $25,938	TOTAL: $211,907
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Friedmann, P.	LARC/Hammond, C. E.	41-Aero Engr

NGR 05-007-416 University of California - Los Angeles 1491
Research on interaction of satellite-speed helium atoms with aluminum and quartz surfaces

Period	*Obligations*	
10/09/73-09/30/77	FY78:	TOTAL: $130,370
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Knuth, E. L.	LARC/Keating, G. M.	13-Physics

NGR 05-007-418 University of California - Los Angeles 1492
Utricular influences on visual motor control research

Period	*Obligations*	
09/01/73-07/01/79	FY78: $21,310	TOTAL: $115,023
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Markham, C. H.	ARC/Daunton, N. G.	51-Biology

NSG 1490 University of California - Los Angeles 1493
Fundamental studies of methods for structural synthesis

Period	*Obligations*	
02/01/80-01/31/81	FY78: $122,416	TOTAL: $122,416
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Schmit, L. A.	LARC/Sobieszczanski, J.	49-Engr, NEC

NSG 2270 University of California - Los Angeles 1494
Eighth U. S. National Congress of Applied Mechanics

Period	*Obligations*	
10/01/77-09/30/78	FY78: $2,500	TOTAL: $2,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cole, J. D.	ARC/Inouye, M.	49-Engr, NEC
Fourney, M. E.	ARC/Chapman, G. T.	

NSG 2290 University of California - Los Angeles 1495
Research program in jet/surface interactions

Period	*Obligations*	
11/01/77-10/31/80	FY78: $50,000	TOTAL: $50,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Meecham, W. C.	ARC/Ahtye, W. F.	41-Aero Engr
	ARC/Hickey, D. H.	

NSG 2320 University of California - Los Angeles 1496
Composite glass fibers with ultra high modulus

Period	*Obligations*	
06/01/78-05/31/79	FY78: $23,585	TOTAL: $23,585
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
MacKenzie, J. D.	ARC/Riccitiello, S. R.	47-Materials Engr
	ARC/Goldstein, G. E.	

NSG 2321 University of California - Los Angeles 1497
High modulus glass fibers by ionic and atomic stuffing

Period	*Obligations*	
06/01/78-05/31/79	FY78: $24,154	TOTAL: $24,154
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
MacKenzie, J. D.	ARC/Riccitiello, S. R.	19-Phys Sci, NEC
	ARC/Goldstein, H. E.	

NSG 3082 University of California - Los Angeles 1498
Investigation of aeroelastic effects in wind turbines

Period	*Obligations*	
09/01/75-08/31/78	FY78: $1	TOTAL: $68,274
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Friedman, P. P.	LERC/Spera, D. A.	46-Mech Engr

NSG 3116 University of California - Los Angeles 1499
Forecast of future aviation fuels

Period	*Obligations*	
08/01/76-10/01/79	FY78: $149,026	TOTAL: $247,826
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
English, J. M.	LERC/Friedman, R.	41-Aero Engr
Liu, C. Y.		

NSG 3153 **University of California - Los Angeles** **1500**
Cryo-coolant helium super conductor interaction

Period	*Obligations*	
06/01/77-01/14/79	FY78: $19,000	TOTAL: $43,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Frederking, T. H.	LERC/Burkhart, J. A. LERC/Bercaw, R. W.	46-Mech Engr

NSG 4001 **University of California - Los Angeles** **1501**
Short-time climatology related to air turbulence

Period	*Obligations*	
03/01/74-03/31/79	FY78:	TOTAL: $118,809
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wurtele, M. G.	DFRC/Ehernberger, L. J.	31-Atmos Sci

NSG 4015 **University of California - Los Angeles** **1502**
Modelling, identification and control with applications to flight vehicles

Period	*Obligations*	
02/01/78-01/31/81	FY78: $80,000	TOTAL: $80,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Balakrishnan, A. V.	DFRC/Edwards, J. W. DFRC/Iliff, K. W.	41-Aero Engr

NSG 5056 **University of California - Los Angeles** **1503**
Investigation of the far UV spectra of the pole on BE stars Cen and Cyg

Period	*Obligations*	
02/01/75-09/30/77	FY78:	TOTAL: $8,623
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Peters, C. J.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5070 **University of California - Los Angeles** **1504**
Depletions and physical conditions within diffuse interstellar clouds

Period	*Obligations*	
10/01/75-09/30/77	FY78:	TOTAL: $2,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Jura, M. A.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5149 **University of California - Los Angeles** **1505**
Observations of hot white dwarfs from SAS-3

Period	*Obligations*	
01/01/77-06/30/78	FY78:	TOTAL: $8,359
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Arozullah, M. Crist, S. C.	GSFC/Wende, C. D.	11-Astronomy

NSG 5165 **University of California - Los Angeles** **1506**
A search for slow X-ray pulsars from Orbiting Astronomical Observatory Copernicus

Period	*Obligations*	
03/14/77-11/13/78	FY78:	TOTAL: $8,540
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Margon, B. H.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5169 **University of California - Los Angeles** **1507**
Physical conditions, abundances and chemistry in diffuse interstellar clouds

Period	*Obligations*	
03/14/77-03/13/79	FY78: $2,503	TOTAL: $4,445
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Jura, M. A.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5190 **University of California - Los Angeles** **1508**
Energetic particle precipitation effects on stratospheric and mesospheric composition and dynamics

Period	*Obligations*	
07/18/77-12/31/78	FY78:	TOTAL: $34,413
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Thorne, R. M. Siscoe, G. L. Venkateswaran, S. V.	GSFC/Reed, E. I.	31-Atmos Sci

NSG 5263 **University of California - Los Angeles** **1509**
Earth dynamics analyses

Period	*Obligations*	
03/15/78-03/14/79	FY78: $73,000	TOTAL: $73,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kaula, W. M. Schubert, G. Jackson, D. D.	GSFC/Smith, D. E.	32-Geological Sci

NSG 5272 **University of California - Los Angeles** **1510**
Problems of mass loss and mass transfer in close binary systems

Period	*Obligations*	
05/01/78-04/30/79	FY78: $15,999	TOTAL: $15,999
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Plavec, M.	GSFC/Boggess, A. GSFC/West, D. K.	11-Astronomy

NSG 7002 **University of California - Los Angeles** **1511**
Anelastic models of fault zone tectonics and their measurement by space techniques

Period	*Obligations*	
11/01/73-03/31/78	FY78:	TOTAL: $236,110
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kaula, W. M. Schubert, G. Jackson, D. D.	HQ-ER/Murphy, J. P.	32-Geological Sci

NSG 7052 **University of California - Los Angeles** **1512**
Shock processes in terrestrial analogs of porous lunar & meteoritic materials

Period	*Obligations*	
04/01/74-01/31/80	FY78: $34,986	TOTAL: $137,486
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Oertel, G.	HQ-SL/Quaide, W. L. HQ-SL/French, B. M.	32-Geological Sci

NSG 7158 **University of California - Los Angeles** **1513**
Three dimensional study of solar oscillation

Period	*Obligations*	
07/01/75-11/30/77	FY78: $5	TOTAL: $42,005
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ulrich, R. K.	HQ-ST/Timothy, A. F.	13-Physics

NSG 7164 **University of California - Los Angeles** **1514**
Dynamical studies of the Venus atmosphere

Period	*Obligations*	
09/01/75-08/31/78	FY78: $24,538	TOTAL: $69,628
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Schubert, G.	HQ-SL/Brunk, W. E. HQ-SL/Mitz, M. A.	31-Atmos Sci

NSG 7180 **University of California - Los Angeles** **1515**
Investigation of the subsonic magnetosheath plasma and magnetic field data from Explorer

Period	*Obligations*	
10/01/75-12/31/78	FY78: $40,000	TOTAL: $99,950
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Siscoe, G. L.	HQ-ST/King, J. H. HQ-ST/Schmerling, E. R.	39-Env Sci, NEC

NSG 7239 **University of California - Los Angeles** **1516**
Possible correlations between the interplanetary magnetic field and zodiacal light polarization vectors

Period	*Obligations*	
06/01/76-09/30/78	FY78:	TOTAL: $15,135
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Aller, L. H.	HQ-SL/Donn, B. D.	31-Atmos Sci

NSG 7276 **University of California - Los Angeles** **1517**
An investigation of Jupiter's magnetosphere and of the solar wind at large distances from the sun using data from the Pioneers 10 and 11 spacecraft

Period	*Obligations*	
07/01/76-09/30/77	FY78:	TOTAL: $35,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Coleman, P. J., Jr.	HQ-ST/Taylor, W. W.	39-Env Sci, NEC

NSG 7282 **University of California - Los Angeles** **1518**
Experimental study of Martian carbonate formation

Period	*Obligations*	
10/01/76-09/30/78	FY78: $15,287	TOTAL: $30,124
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kieffer, H. H.	HQ-SL/Dwornik, S. E. HQ-SL/Boyce, J. M.	32-Geological Sci

NSG 7295 **University of California - Los Angeles** **1519**
Analysis of data from the helium vector magnetometers on the Pioneers 10 and 11 spacecraft

Period	*Obligations*	
10/01/76-09/30/78	FY78: $75,000	TOTAL: $175,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Coleman, P. J., Jr.	HQ-SL/Dwornik, S. E. HQ-SL/Boyce, J. M.	31-Atmos Sci

NSG 7315 **University of California - Los Angeles** **1520**
Theoretical studies of moon plasma interactions

Period	*Obligations*	
02/01/77-01/31/79	FY78: $32,647	TOTAL: $67,347
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Schubert, G.	HQ-SL/Quaide, W. L. HQ-SL/French, B. E.	32-Geological Sci

NSG 7335 **University of California - Los Angeles** **1521**
Rare earths in inclusions from different classes of carbonaceous chondrites

Period	*Obligations*	
03/01/77-02/28/78	FY78:	TOTAL: $29,851
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Boynton, W. V.	HQ-SL/French, B. M. HQ-SL/Quaide, W. L.	32-Geological Sci

NSG 7341 **University of California - Los Angeles** **1522**
Physics of astrophysical plasmas

Period	*Obligations*	
04/01/77-06/30/79	FY78:	TOTAL: $30,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kennel, C. F.	HQ-SC/Opp, A. G. HQ-SC/Fishman, G. J.	11-Astronomy

NSG 7407 **University of California - Los Angeles** **1523**
A three-dimensional observational study of the solar five-minute oscillation

Period	*Obligations*	
10/01/77-09/30/78	FY78: $35,000	TOTAL: $35,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ulrich, R. K.	HQ-ST/Bohlin, J. D.	13-Physics

NGL 05-008-005 **University of California - Riverside** **1524**
Atomic scattering theory

Period	*Obligations*	
11/29/66-02/28/79	FY78:	TOTAL: $130,953
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Poe, R. T.	GSFC/Temkin, A.	13-Physics

NGR 05-008-022 **University of California - Riverside** **1525**
Measurement of neutrons from sun

Period	*Obligations*	
05/16/69-08/15/78	FY78: $40,000	TOTAL: $380,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
White, R. S.	HQ-SC/Fishman, G. HQ-SC/Opp, A. G.	11-Astronomy

NAS 2-6552 **University of California - San Diego** **1526**
Data analysis of Jovian trapped radiation by Pioneer F/G

Period	*Obligations*	
01/25/72-09/30/78	FY78: $78,117	TOTAL: $811,961
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fillius, R. W.	ARC/Hall, C. F. ARC/Porter, D. L.	11-Astronomy

NAS 3-21386 **University of California - San Diego** **1527**
Measurement of optical properties for Great Lakes organic and inorganic species

Period	*Obligations*	
07/31/78-10/30/78	FY78: $6,995	TOTAL: $6,995
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Austin, R. W.	LERC/Salzman, J. A.	19-Phys Sci, NEC

NAS 3-21473 **University of California - San Diego** **1528**
Lake Erie spectral radiance and irradiance study

Period	*Obligations*	
06/06/78-08/06/78	FY78: $13,109	TOTAL: $13,109
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Austin, R. W.	LERC/Salzman, J. A.	33-Oceanography

NAS 5-22375 **University of California - San Diego** **1529**
Hard X-ray imaging system study

Period	*Obligations*	
05/13/75-12/29/78	FY78: $134,375	TOTAL: $316,757
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Peterson, L. E. Hudson, H. S.	GSFC/Stouffer, G. G.	11-Astronomy

NAS 5-23481 **University of California - San Diego** **1530**
A spacecraft charging study

Period	*Obligations*	
05/03/76-09/30/79	FY78: $42,999	TOTAL: $184,014
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McIlwain, C. E.	GSFC/Bartlett, R. O.	11-Astronomy

NAS 5-23705 **University of California - San Diego** **1531**
Data reduction and analysis of environmental measurements experiments data onboard ATS-6

Period	*Obligations*	
11/15/76-12/31/78	FY78: $40,000	TOTAL: $113,335
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McIlwain, C. E.	GSFC/Wende, C. D.	31-Atmos Sci

NAS 5-24463 **University of California - San Diego** **1532**
Faint object spectrograph for space telescope spectrograph for the space telescope program

Period	*Obligations*	
09/15/78-01/31/84	FY78: $1,908,000	TOTAL: $1,908,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Harms, R. J.	GSFC/Wrublik, D. GSFC/Sours, W.	11-Astronomy

NAS 5-24466 **University of California - San Diego** **1533**
Fabrication and analysis of digitons

Period	*Obligations*	
02/01/78-08/15/78	FY78: $39,985	TOTAL: $39,985
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Beaver, E. A.	GSFC/Shannon, J. L., Jr.	11-Astronomy

NAS 5-25054 **University of California - San Diego** **1534**
Development of digiton image tubes

Period	*Obligations*	
05/01/78-01/15/79	FY78: $285,000	TOTAL: $285,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Beaver, E. A.	GSFC/Shannon, J. L., Jr.	11-Astronomy

NAS 6-2506 **University of California - San Diego** **1535**
GEOS-C research

Period	*Obligations*	
12/17/74-10/31/77	FY78:	TOTAL: $57,300
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hendershott, M. Munk, W. Zetler, B.	WFC/Stanley, R.	11-Astronomy

NAS 8-27974 **University of California - San Diego** **1536**
Design & development of AGR-4 MeV range gamma ray telescope experiment under the HEAO program

Period	*Obligations*	
06/22/72-09/30/79	FY78: $466,100	TOTAL: $6,957,119
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Peterson, L. E.	MSFC/Neuschaefer, R.	11-Astronomy

NAS 8-31145 **University of California - San Diego** **1537**
Joint analysis of satellite data study

Period	*Obligations*	
12/17/74-09/30/78	FY78: $9,945	TOTAL: $83,502
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McIlwain, C. E.	MSFC/Chappell, C. R. MSFC/Burch, J. L.	13-Physics

NASW 2996 **University of California - San Diego** **1538**
Development of a 200 channel photometer for use in low light level astronomy

Period	*Obligations*	
07/01/76-08/15/78	FY78: $63,998	TOTAL: $205,998
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McIlwain, C. E. Beaver, E. A. Arms, R. H.	HQ-SC/Aucremanne, M. J. HQ-SC/Rosendhal, J. D.	31-Atmos Sci

NGL 05-005-003 **University of California - San Diego** **1539**
Laboratory and balloon experiments in X-ray and gamma ray astronomy

Period	*Obligations*	
09/15/62-11/30/78	FY78: $155,000	TOTAL: $2,250,752
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Peterson, L. E.	HQ-SC/Fishman, G. J. HQ-SC/Opp, A. G.	13-Physics

NGL 05-005-004 **University of California - San Diego** **1540**
Theoretical studies in astrophysics

Period	*Obligations*	
02/04/63-03/31/81	FY78: $29,000	TOTAL: $776,361
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gould, R. J.	HQ-SC/Rosendhal, J. D. HQ-SC/Roman, N. G.	11-Astronomy

NGL 05-005-007 University of California - San Diego 1541
Study of geomagnetically trapped particles by Explorer & Injun satellite data, refining particle detectors, detector systems & telemetered-data processing equipment

Period 02/20/64-09/30/80 *Obligations* FY78: $194,697 TOTAL: $2,309,591
Prin. Invest. McIlwain, C. E.
NASA Tech. Officer HQ-ST/King, J. H.; HQ-ST/Schmerling, E. R.
CASE Category 13-Physics

NGL 05-009-002 University of California - San Diego 1542
Studies of the composition and structure of meteorites

Period 10/02/63-02/28/79 *Obligations* FY78: $49,701 TOTAL: $673,879
Prin. Invest. Arrhenius, G.
NASA Tech. Officer HQ-SL/Quaide, W. L.; HQ-SL/French, B. E.
CASE Category 32-Geological Sci

NGL 05-009-004 University of California - San Diego 1543
Research on interaction of meteorites, cosmic rays, and consideration of origin & history of meteorites

Period 12/19/62-03/14/80 *Obligations* FY78: $30,280 TOTAL: $1,002,694
Prin. Invest. Arnold, J. R.; Fruchter, J. S.; Kohl, C. P.
NASA Tech. Officer HQ-SL/French, B. M.; HQ-SL/Quaide, W. E.
CASE Category 32-Geological Sci

NGL 05-009-005 University of California - San Diego 1544
Research on general geochemical problems, including meteorite materials, rare gas content of meteorites & separation in gas phase at time of formation of solar system

Period 10/31/62-08/31/79 *Obligations* FY78: $8,957 TOTAL: $518,663
Prin. Invest. Suess, H. E.; Herndon, J. M.
NASA Tech. Officer HQ-SL/Quaide, W. L.; HQ-SL/French, B. E.
CASE Category 19-Phys Sci, NEC

NGL 05-009-109 University of California - San Diego 1545
In-flight evaluation of weightlessness and gravity on cardiopulmonary function of man

Period 02/17/69-10/31/80 *Obligations* FY78: $30,000 TOTAL: $873,139
Prin. Invest. West, J. B.
NASA Tech. Officer ARC/Greenleaf, J. E.
CASE Category 53-Other Medical

NGL 05-009-148 University of California - San Diego 1546
Lunar sample analysis

Period 02/11/71-01/31/80 *Obligations* FY78: $34,291 TOTAL: $810,920
Prin. Invest. Arnold, J. R.
NASA Tech. Officer JSC/Harris, J. W.
CASE Category 12-Chemistry

NGL 05-009-150 University of California - San Diego 1547
Lunar sample analysis

Period 02/01/71-01/31/81 *Obligations* FY78: $220,611 TOTAL: $1,338,722
Prin. Invest. Marti, K.
NASA Tech. Officer JSC/Harris, J. W.
CASE Category 12-Chemistry

NGR 05-005-005 University of California - San Diego 1548
Study of lunar gamma ray emission

Period 09/10/63-05/31/79 *Obligations* FY78: $51,278 TOTAL: $712,350
Prin. Invest. Arnold, J. R.
NASA Tech. Officer HQ-SL/Quaide, W. L.; HQ-SL/French, B. M.
CASE Category 32-Geological Sci

NGR 05-005-055 University of California - San Diego 1549
Infrared astronomic observation from high altitude airplane/telescope program

Period 06/05/73-10/31/78 *Obligations* FY78: $63,000 TOTAL: $289,217
Prin. Invest. Soifer, B. T.
NASA Tech. Officer ARC/Haughney, L. C.; ARC/McClenahan, J. O.
CASE Category 11-Astronomy

NGR 05-009-075 University of California - San Diego 1550
Velocity distributions and electron moment equations

Period 09/13/67-02/28/77 *Obligations* FY78: TOTAL: $432,784
Prin. Invest. Banks, P. M.
NASA Tech. Officer HQ-ST/Taylor, W. W.
CASE Category 13-Physics

NGR 05-009-083 University of California - San Diego 1551
Electrophysiological studies of the nervous system

Period 01/01/68-09/01/78 *Obligations* FY78: TOTAL: $113,059
Prin. Invest. Galambos, R.
NASA Tecn. Officer ARC/Winter, D. L.
CASE Category 61-Biol Aspects

NGR 05-009-110 University of California - San Diego 1552
The structure and evolution of the asteroid belt

Period 01/23/70-09/30/78 *Obligations* FY78: $45,000 TOTAL: $473,690
Prin. Invest. Alfven, H.
NASA Tech. Officer HQ-SL/Donn, B. D.; HQ-SL/Brunk, W. E.
CASE Category 11-Astronomy

NGR 05-009-188 University of California - San Diego 1553
Construction of a 200 channel photometer for use in low light level astronomy

Period 05/17/72-03/31/79 *Obligations* FY78: $14,863 TOTAL: $564,863
Prin. Invest. McIlwain, C. E.
NASA Tech. Officer HQ-SC/Rosendhal, J. D.; HQ-SC/Roman, N. G.
CASE Category 11-Astronomy

NGR 05-009-213 **University of California - San Diego** **1554**
Hydrostatic pressure and macro-molecular synthesis in marine bacteria

Period	*Obligations*	
04/12/73-06/30/78	FY78:	TOTAL: $169,954
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Yayanos, A. A.	HQ-SB/Young, R. S.	51-Biology

NGR 05-009-218 **University of California - San Diego** **1555**
An automatic analyzer for amino acids purines and pyrimidines to examine lunar and Martian soil samples

Period	*Obligations*	
09/12/72-12/31/77	FY78:	TOTAL: $214,595
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Miller, S. L.	HQ-SB/Young, R. S.	12-Chemistry

NGR 05-009-246 **University of California - San Diego** **1556**
Geophysical perturbations on satellite geodesy

Period	*Obligations*	
11/01/73-11/30/78	FY78: $187,000	TOTAL: $813,236
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Berger, J.	GSFC/Lawson, D. E.	39-Env Sci, NEC
Brune, J. N.		

NGR 05-009-257 **University of California - San Diego** **1557**
Single scan television radiography

Period	*Obligations*	
11/01/73-11/01/79	FY78:	TOTAL: $163,979
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Baily, N. A.	ARC/Sandler, H.	52-Clinical Med

NGR 05-009-264 **University of California - San Diego** **1558**
Optical parallel processing

Period	*Obligations*	
03/15/74-10/31/78	FY78: $35,006	TOTAL: $177,979
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lee, S. H.	GSFC/Schaefer, D. H.	49-Engr, NEC

NSG 1386 **University of California - San Diego** **1559**
Measurements in turbulent boundary layers with slot injection of helium

Period	*Obligations*	
02/01/77-11/30/78	FY78:	TOTAL: $40,653
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Libby, P. A.	LARC/Cary, A. M., Jr.	41-Aero Engr
Larue, J. C.	LARC/Hefner, J. N.	

NSG 3034 **University of California - San Diego** **1560**
Preparation and identification of hybrides of intermetallic compounds

Period	*Obligations*	
08/01/74-12/31/78	FY78: $20,000	TOTAL: $151,031
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Oesterreicher, H.	LERC/Flood, D. J.	47-Materials Engr

NSG 3047 **University of California - San Diego** **1561**
Investigation of droplet burning at zero g

Period	*Obligations*	
06/01/75-12/31/78	FY78:	TOTAL: $75,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Williams, F. A.	LERC/Haggard, J. B.	43-Chem Engr

NSG 3055 **University of California - San Diego** **1562**
Chemical vapor deposition of high TC superconductors

Period	*Obligations*	
05/01/75-12/31/78	FY78: $71,045	TOTAL: $216,045
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Webb, G. W.	LERC/Woollam, J. A.	19-Phys Sci, NEC
Engelhardt, J. J.	LERC/Brown, G. V.	

NSG 3103 **University of California - San Diego** **1563**
Superconductivity in ternary molybdenum sulfides

Period	*Obligations*	
04/01/76-03/31/79	FY78: $16,000	TOTAL: $101,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Luo, H. L.	LERC/Woollam, J. A.	13-Physics
	LERC/Brown, G. V.	

NSG 3150 **University of California - San Diego** **1564**
Analysis of interaction between spacecraft and artificially injected particles

Period	*Obligations*	
05/01/77-04/31/79	FY78: $90,714	TOTAL: $180,671
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Whipple, E. C., Jr.	LERC/Purvis, C. K.	39-Env Sci, NEC
Deforest, S. E.	LERC/Stevens, N. J.	

NSG 3219 **University of California - San Diego** **1565**
Research on variable density turbulence

Period	*Obligations*	
10/01/78-09/21/79	FY78: $65,577	TOTAL: $65,577
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Libby, P. A.	LERC/Marek, C. J.	41-Aero Engr
Larue, J. C.		

NSG 7027 **University of California - San Diego** **1566**
Orbital geochemical data analysis and synthesis

Period	*Obligations*	
03/01/74-01/31/79	FY78: $62,730	TOTAL: $343,568
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Arnold, J. R.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. M.	

NSG 7100 **University of California - San Diego** **1567**
Infrared continuum observations of solar atmospheric structure

Period	*Obligations*	
11/14/74-03/31/78	FY78:	TOTAL: $83,001
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hudson, H. S.	HQ-ST/Bohlin, J. D.	13-Physics

7102 **University of California - San Diego** 1568
Research on processes controlling the formation and evolution of the small bodies in the solar system

Period	*Obligations*	
09/01/74-09/30/78	FY78: $39,000	TOTAL: $189,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Alfven, H.	HQ-SL/Dwornik, S. E. HQ-SL/Boyce, J. M.	32-Geological Sci

7121 **University of California - San Diego** 1569
Carbonaceous chondrites early irradiation and 244/pu fission records

Period	*Obligations*	
02/27/75-01/31/79	FY78: $43,389	TOTAL: $132,422
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
MacDougall, J. D.	HQ-SL/French, B. M. HQ-SL/Quaide, W. L.	32-Geological Sci

7161 **University of California - San Diego** 1570
Analysis and interpretation of solar X-ray data from OSO-7

Period	*Obligations*	
07/01/75-09/30/78	FY78: $46,000	TOTAL: $163,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Peterson, L. E.	HQ-ST/Timothy, A. F.	13-Physics

7294 **University of California - San Diego** 1571
Preparation of a set of sky maps in hard X-rays from OSO-1 data

Period	*Obligations*	
10/01/76-09/30/78	FY78:	TOTAL: $30,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Peterson, L. E.	HQ-SC/Opp, A. G.	11-Astronomy

7377 **University of California - San Diego** 1572
Ultraviolet spectra of quasars related extra galactic sources, and X-ray sources

Period	*Obligations*	
09/15/77-09/14/79	FY78: $30,000	TOTAL: $30,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Burbidge, M.	HQ-SC/Burbidge, E. HQ-SC/Rosendhal, J. D.	11-Astronomy

7406 **University of California - San Diego** 1573
Hydrodynamic models of flares

Period	*Obligations*	
03/01/78-02/28/79	FY78: $47,000	TOTAL: $47,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Canfield, R. C.	HQ-ST/Bohlin, J. D.	13-Physics

7474 **University of California - San Diego** 1574
Thermal history of enstatite chondrite meteorites

Period	*Obligations*	
07/01/78-06/30/79	FY78: $17,000	TOTAL: $17,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rudee, M. L. Herndon, J. M.	HQ-SL/French, B. M. HQ-SL/Quaide, W. L.	32-Geological Sci

NSG 9048 **University of California - San Diego** 1575
Mechanism of compensation for vestibular lesions and integrative functions in control of equilibrium

Period	*Obligations*	
01/01/77-05/01/79	FY78: $41,250	TOTAL: $111,250
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bullock, T. H.	JSC/Homick, J. L.	53-Other Medical

W-14108 **University of California - San Diego** 1576
Formation and evolution of the small bodies in the solar system

Period	*Obligations*	
02/06/76-08/31/76	FY78:	TOTAL: $5,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Alfven, H.	HQ-SL/Dwornik, S. E.	32-Geological Sci

NCA 2-665708 **University of California - San Francisco** 1577
Quantitative determination of diastolic left ventricular properties

Period	*Obligations*	
03/01/77-12/31/78	FY78:	TOTAL: $6,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Glantz, S. A. Tyberg, J.	ARC/Sandler, H. ARC/McCutcheon, E.	53-Other Medical

NCA 2-665801 **University of California - San Francisco** 1578
Amelioration of muscle protein degradation

Period	*Obligations*	
10/01/77-09/30/79	FY78: $16,500	TOTAL: $16,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Searle, G. L.	ARC/Feller, D. D.	59-Life Sci, NEC

NCA 2-665802 **University of California - San Francisco** 1579
Light and electron microscopic investigations of the connections of brain stem emetic trigger zone regions

Period	*Obligations*	
01/01/78-12/31/79	FY78: $19,965	TOTAL: $19,965
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Snyder, R. L.	ARC/Mehler, W. R.	51-Biology

NCA 2-665803 **University of California - San Francisco** 1580
Evaluation of endocrinological control of y-carboxyglutamic acid-containing protein in bone

Period	*Obligations*	
01/01/78-12/31/79	FY78: $15,400	TOTAL: $15,400
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Asling, C. W.	ARC/Callahan, P. X. ARC/Ellis, S.	53-Other Medical

NCA 2-665804 **University of California - San Francisco** 1581
Isolation of bioassayable growth hormone from incubated pituitary glands

Period	*Obligations*	
01/01/78-12/31/78	FY78: $19,990	TOTAL: $19,990
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Spencer, M.	ARC/Grindeland, R.	53-Other Medical

NCA 2-665806 **University of California - San Francisco** **1582**
Regulation of adrenal glucocorticoid response to hemorrhage in the conscious dog

Period	*Obligations*	
06/01/78-05/31/80	FY78: $17,336	TOTAL: $17,336
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Dallman, M. F.	ARC/Keil, L. C.	59-Life Sci, NEC

NCA 2-665807 **University of California - San Francisco** **1583**
Control of blood volume

Period	*Obligations*	
06/01/78-05/31/80	FY78: $9,746	TOTAL: $9,746
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ramsay, D. J.	ARC/Keil, L. C.	53-Other Medical

NCA 2-665808 **University of California - San Francisco** **1584**
Mechanisms of hormone-tissue interactions in altered gravity states

Period	*Obligations*	
06/01/78-05/31/80	FY78: $11,660	TOTAL: $11,660
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Goldfine, I.	ARC/Heinrich, M. R.	51-Biology

NCA 2-665809 **University of California - San Francisco** **1585**
Harmonic analysis of vestibular-visual sensory conflict

Period	*Obligations*	
07/01/78-09/30/78	FY78: $4,431	TOTAL: $4,431
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ochs, A. L.	ARC/Daunton, N. G.	51-Biology

NCA 2-665810 **University of California - San Francisco** **1586**
Autogenic-feedback training for vestibular symptomatology: Massed vs. distributed training schedules

Period	*Obligations*	
09/01/78-08/31/80	FY78: $2,000	TOTAL: $2,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kamiya, J. Toscano, W. B. Johnston, J.	ARC/Cowings, P. S.	61-Biol Aspects

NSG 7151 **University of California - San Francisco** **1587**
Light energy conversion in halobacterium

Period	*Obligations*	
07/01/75-09/30/78	FY78: $50,000	TOTAL: $169,620
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Stoeckenius, W.	HQ-SB/Young, R. S.	51-Biology

NAS 9-15509 **University of California - Santa Barbara** **1588**
Forest classification and inventory system using LANDSAT, digital terrain, and ground sample data

Period	*Obligations*	
04/01/78-04/30/79	FY78: $52,136	TOTAL: $52,136
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Strahler, A. H.	JSC/Amsbury, D. L.	32-Geological Sci

NASW 3118 **University of California - Santa Barbara** **1589**
Conference of users of geo-based data systems to examine geo-based information system impacts

Period	*Obligations*	
02/23/78-04/05/78	FY78: $39,825	TOTAL: $39,825
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Unavailable	HQ-EP/Prinkler, B.	32-Geological Sci

NCA 2-680802 **University of California - Santa Barbara** **1590**
Studies on the effects of different concentrations of calcium and other ions on tissue metabolism in temperature regulation

Period	*Obligations*	
01/01/78-12/31/78	FY78: $10,362	TOTAL: $10,362
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rochelle, R. H. Chaffee, R. R.	ARC/Greenleaf, J. E.	59-Life Sci, NEC

NCA 2-680803 **University of California - Santa Barbara** **1591**
Joint developmental program in support of the establishment of a universities regional applications program

Period	*Obligations*	
01/01/78-10/31/78	FY78: $19,984	TOTAL: $19,984
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Estes, J. E.	ARC/Briggs, B. R. ARC/Welch, R.	39-Env Sci, NEC

NCA 2-680805 **University of California - Santa Barbara** **1592**
Studies of rotational gas cloud collapse, fragmentation and disk formation

Period	*Obligations*	
09/01/78-08/31/79	FY78: $1,430	TOTAL: $1,430
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Peale, S. J. Boss, A.	ARC/Cassen, P. ARC/Black, D. C.	13-Physics

NGR 05-010-062 **University of California - Santa Barbara** **1593**
Planetary geophysics

Period	*Obligations*	
03/01/73-09/30/78	FY78: $23,153	TOTAL: $114,711
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Peale, S. J.	HQ-SL/Dwornik, S. E. HQ-SL/Boyce, J. M.	32-Geological Sci

NGR 05-010-081 **University of California - Santa Barbara** **1594**
Lunar sample analysis

Period	*Obligations*	
02/01/73-01/31/79	FY78: $62,485	TOTAL: $370,402
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Tilton, G. R.	JSC/Harris, J. W.	32-Geological Sci

NSG 2222 **University of California - Santa Barbara** **1595**
An investigation of the kinetics for hydrogen chemisorption on iron metal surfaces

Period	*Obligations*	
04/01/77-03/31/79	FY78: $38,204	TOTAL: $74,678
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Shanabarger, M. R.	ARC/Nelson, H. G.	47-Materials Engr

5166 **University of California - Santa Barbara** **1596**
Research of ocean color in the Santa Barbara Channel

Period	*Obligations*	
03/01/76-12/31/77	FY78:	TOTAL: $18,305
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Estes, J. E.	GSFC/Barnes, W.	33-Oceanography

NSG 5155 **University of California - Santa Barbara** **1597**
Remote sensing applications to hydrologic modeling

Period	*Obligations*	
01/17/77-03/16/78	FY78:	TOTAL: $49,547
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ozier, J. D.	GSFC/Salomonson, V. V.	
Simonett, D. S.	GSFC/Ormsby, J. O.	32-Geological Sci
Estes, J. E.		

NSG 5170 **University of California - Santa Barbara** **1598**
Field sampling and data analysis for radar soil moisture test

Period	*Obligations*	
03/04/77-03/03/79	FY78: $29,984	TOTAL: $54,838
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Estes, J. E.	GSFC/Chang, A. T.	32-Geological Sci
Simonett, D. S.		

NSG 5262 **University of California - Santa Barbara** **1599**
Calibration of satellite data for input to distributed parameter hydrologic models

Period	*Obligations*	
04/01/78-03/31/79	FY78: $89,974	TOTAL: $89,974
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Dozier, J.	GSFC/Rango, A.	39-Env Sci, NEC
Simonett, D. S.	GSFC/Salomonson, V. V.	

NSG 9020 **University of California - Santa Barbara** **1600**
Remanent magnetization of lunar samples

Period	*Obligations*	
10/31/74-01/31/81	FY78: $50,599	TOTAL: $401,356
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fuller, M. D.	JSC/Harris, J. W.	19-Phys Sci, NEC

NGR 05-061-015 **University of California - Santa Cruz** **1601**
Infrared instrumentation

Period	*Obligations*	
07/06/72-04/30/79	FY78: $39,054	TOTAL: $193,385
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rank, D. M.	HQ-SC/Boggess, N. W.	11-Astronomy
	HQ-SC/Roman, N. G.	

NAS 2-9504 **University of San Francisco** **1602**
Radiation dosimetry experiment on U.S.S.R./U.S. Kosmos 77 flight

Period	*Obligations*	
02/16/77-08/15/79	FY78: $46,800	TOTAL: $138,300
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Benton, E. V.	ARC/Souza, K. A.	13-Physics

NAS 2-9845 **University of San Francisco** **1603**
General development of haze particle dosimetry

Period	*Obligations*	
02/01/78-10/31/78	FY78: $45,000	TOTAL: $45,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Benton, E. V.	ARC/Philpott, D. E.	59-Life Sci, NEC

NAS 8-26758 **University of San Francisco** **1604**
Study for heavy particle, passive, personnel dosimetry using etched particles

Period	*Obligations*	
01/21/71-12/31/78	FY78: $15,000	TOTAL: $107,704
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Benton, E. V.	MSFC/Parnell, T. A.	13-Physics
	MSFC/Thomas, P. E.	

NAS 9-15152 **University of San Francisco** **1605**
Automated analysis system for haze particle trace dosimeters

Period	*Obligations*	
02/01/77-10/31/79	FY78: $45,000	TOTAL: $218,607
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Benton, E. V.	JSC/Barnes, C. M.	53-Other Medical

NAS 9-15337 **University of San Francisco** **1606**
Definition of Spacelab I experiment on high energy particle dosimetry

Period	*Obligations*	
04/01/77-12/31/81	FY78: $40,000	TOTAL: $50,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Benton, E. V.	JSC/Thirolf, R. G.	13-Physics
	JSC/Huffstetler, W. J.	

NSG 2039 **University of San Francisco** **1607**
Research on reactive toxicity of pyrolysis effluents

Period	*Obligations*	
08/01/74-01/31/79	FY78: $47,650	TOTAL: $340,856
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hilado, C. J.	ARC/Kourtides, D. A.	12-Chemistry
Furst, A.	ARC/Parker, J. A.	

NSG 2063 **University of San Francisco** **1608**
Effects of heavy particle radiation of the mammalian brain and related tissues

Period	*Obligations*	
01/01/75-09/30/79	FY78: $70,000	TOTAL: $367,986
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Benton, E. V.	ARC/Miquel, J.	51-Biology

NSG 2276 **University of San Francisco** **1609**
Study of chemical evolution interactions of metal ions and nucleotides

Period	*Obligations*	
11/01/77-10/31/78	FY78: $23,364	TOTAL: $23,364
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Furst, A.	ARC/Lawless, J. G.	12-Chemistry

NSG 2304 **University of San Francisco** **1610**
Histopathological changes in rodents caused by haze particle irradiation

Period	*Obligations*	
03/01/78-12/31/78	FY78: $11,124	TOTAL: $11,124
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Benton, E. V.	ARC/Kraft, L. M. ARC/Kennard, J.	51-Biology

NAS 2-9967 **University of Santa Clara** **1611**
Study of evaporative heat loss comparisons between direct calorimetry and local hygrometer techniques

Period	*Obligations*	
06/06/78-07/06/79	FY78: $14,300	TOTAL: $14,300
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Pefley, R. K.	ARC/Greenleaf, J. E.	59-Life Sci, NEC

NCA 2-685402 **University of Santa Clara** **1612**
Joint use of specialized resources (law)

Period	*Obligations*	
07/15/73-12/31/78	FY78: $48,300	TOTAL: $144,900
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Alexander, G.	ARC/Glazer, J. H.	79-Soc Sci, NEC

NCA 2-685701 **University of Santa Clara** **1613**
Thermal history of the moon and terrestrial planets

Period	*Obligations*	
09/01/76-12/31/78	FY78:	TOTAL: $7,056
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Barker, W. A.	ARC/Reynolds, R. T. ARC/Summers, A. L.	32-Geological Sci

NCA 2-685801 **University of Santa Clara** **1614**
The adsorption of bases, nucleosides, and nucleotides on homometallic clays

Period	*Obligations*	
12/01/77-11/30/78	FY78: $12,188	TOTAL: $12,188
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sweeney, M. A.	ARC/Lawless, J. G.	51-Biology

NCA 2-685803 **University of Santa Clara** **1615**
Computer simulation of inviscid transonic flow

Period	*Obligations*	
06/01/78-09/30/78	FY78: $4,974	TOTAL: $4,974
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Drobot, V.	ARC/Ballhaus, W. F. ARC/Holst, T. L.	22-Computer Science

NCA 2-685804 **University of Santa Clara** **1616**
A preliminary investigation of the transportability of image processing software among several computer systems

Period	*Obligations*	
01/01/78-12/31/78	FY78: $5,102	TOTAL: $5,102
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Danielson, R. L.	ARC/Hofman, L.	22-Computer Science

NCA 2-685805 **University of Santa Clara** **1617**
A comprehensive analysis of human performance requirements for future space flight

Period	*Obligations*	
04/01/78-09/30/78	FY78: $10,980	TOTAL: $10,980
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Akins, F.	ARC/Connors, M. M.	62-Social Aspects

NCA 2-685806 **University of Santa Clara** **1618**
Peptide and polynucleotide catalysis of amino acid condensation on hypohydrous clay surfaces

Period	*Obligations*	
06/01/78-12/31/79	FY78: $5,000	TOTAL:
Prin. Invest.	*NASA Tech. Officer*	*CASE*
White, D. H.	ARC/Chang, S.	12-C

NCA 2-685808 **University of Santa Clara**
Bacterial denitrification and steady state growth: A model for the study of mixed cultures

Period	*Obligations*	
05/01/78-12/31/79	FY78: $16,484	TOTAL:
Prin. Invest.	*NASA Tech. Officer*	*CASE*
Tomlinson, G. A.	ARC/Hochstein, L. I.	51

NCA 2-685809 **University of Santa Clara**
Modifications of the Ames one-dimensional and two-di mathematical models of the upper ionosphere of Venus

Period	*Obligations*	
06/01/78-05/31/79	FY78: $13,000	TOTAL:
Prin. Invest.	*NASA Tech. Officer*	*CASE*
McCormick, P. T.	ARC/Whitten, R. C.	

NCA 2-685810 **University of Santa Clara**
Design and implementation of an interactive command for existing batch image processing software

Period	*Obligations*	
06/15/78-12/31/78	FY78: $4,800	TOTAL:
Prin. Invest.	*NASA Tech. Officer*	*CASE*
Danielson, R. L.	ARC/Hofman, L.	22-Comput

NCA 2-685811 **University of Santa Clara**
Models of the lunar remanent field which are consistent Apollo and Lunokhod data

Period	*Obligations*	
07/01/78-08/31/78	FY78: $2,325	TOTAL:
Prin. Invest.	*NASA Tech. Officer*	*CASE*
Barker, W. A.	ARC/Dyal, P.	12

NCA 2-685812 **University of Santa Clara**
Effects of immunologically-induced growth hormone on body composition, metabolism, and brain development

Period	*Obligations*	
07/15/78-09/30/79	FY78: $2,655	TOTAL:
Prin. Invest.	*NASA Tech. Officer*	*CASE*
Fast, T.	ARC/Grindeland, R. ARC/Mehler, W. R.	51

NCA 2-685813 **University of Santa Clara** **1624**
The effects of simulated weightlessness (or hypokinesia) on the humoral immune response in rats

Period	*Obligations*	
07/01/78-08/31/79	FY78: $5,000	TOTAL: $5,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Caren, L. D.	ARC/Mandel, A. D.	51-Biology

NGR 05-017-037 **University of Santa Clara** **1625**
Mapping geology of Mars quadrangle MC-6 Casius

Period	*Obligations*	
01/01/73-03/31/78	FY78:	TOTAL: $171,652
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Greeley, R. Guest, J. E.	HQ-SL/Dwornik, S. E.	32-Geological Sci

NSG 2086 **University of Santa Clara** **1626**
Comparison of finite element & finite difference methods for fluid flow problems

Period	*Obligations*	
07/23/75-10/31/78	FY78: $26,782	TOTAL: $96,846
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Walsh, D. Hodara, H.	ARC/Steger, J. L. ARC/Lomax, H.	13-Physics

NSG 2275 **University of Santa Clara** **1627**
Studies in planetary impact cratering and geomorphology

Period	*Obligations*	
12/01/77-05/30/79	FY78: $34,275	TOTAL: $34,275
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Aggarwal, H. R.	ARC/Oberbeck, V. R.	32-Geological Sci

NSG 2286 **University of Santa Clara** **1628**
Wind tunnel simulations of Martian sand storms

Period	*Obligations*	
12/01/77-12/31/78	FY78: $44,728	TOTAL: $44,728
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Greeley, R. Parkin, C.	ARC/Koontz, O. L.	32-Geological Sci

NSG 7141 **University of Santa Clara** **1629**
Analysis of lunar mare emplacement

Period	*Obligations*	
05/01/75-02/28/78	FY78:	TOTAL: $41,572
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Greeley, R.	HQ-SL/Goldstein, B. E. HQ-SL/Quaide, W. L.	32-Geological Sci

NSG 7330 **University of Santa Clara** **1630**
Effect of layering on viscous flow of lunar craters

Period	*Obligations*	
03/01/77-02/28/79	FY78: $14,999	TOTAL: $40,233
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Aggarwal, H. R.	HQ-SL/Quaide, W. L. HQ-SL/French, B. E.	32-Geological Sci

NAS 2-6558 **University of Southern California** **1631**
Pioneer F/G analysis of ultraviolet experiment

Period	*Obligations*	
09/01/71-09/30/78	FY78: $120,556	TOTAL: $987,209
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Judge, D. L.	ARC/Hall, C. F. ARC/Porter, D. L.	11-Astronomy

NAS 2-7969 **University of Southern California** **1632**
Pioneer 10 and 11 data analysis of plasma analyzer experiment

Period	*Obligations*	
07/01/76-09/30/78	FY78: $69,926	TOTAL: $404,452
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Intriligator, D. S.	ARC/Hall, C. F. ARC/Porter, D. L.	11-Astronomy

NAS 2-9478 **University of Southern California** **1633**
Pioneer/Venus data analysis of the plasma analyzer experiment

Period	*Obligations*	
12/16/77-09/30/79	FY78: $77,620	TOTAL: $77,620
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Intriligator, D. S.	ARC/Hall, C. F. ARC/Porter, D. L.	11-Astronomy

NASW 2771 **University of Southern California** **1634**
Operation of the Western Research Applications Center

Period	*Obligations*	
02/01/75-12/31/76	FY78:	TOTAL: $545,810
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Unavailable	HQ-ET/Holley, H. L.	99-Multi-Discip

NASW 3009 **University of Southern California** **1635**
Development and implementation of a minority industrial assistance program

Period	*Obligations*	
04/01/77-09/30/78	FY78:	TOTAL: $70,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Unavailable	HQ-ET/Gilbert, R.	99-Multi-Discip

NASW 3031 **University of Southern California** **1636**
Operation of NASA Industrial Applications Center

Period	*Obligations*	
01/01/77-03/31/78	FY78: $15,483	TOTAL: $356,733
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Munushan, J. Nilles, J.	HQ-ET/Bivins, R. G.	99-Multi-Discip

NGL 05-018-118 **University of Southern California** **1637**
Advanced communications techniques

Period	*Obligations*	
10/09/69-07/31/78	FY78:	TOTAL: $130,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Andrews, H. C.	GSFC/Kutz, R. L.	45-Elec Engr

NGR 05-018-178 **University of Southern California** **1638**
Dynamics of rotating-stratified flows with applications to the Jovian atmosphere

Period	*Obligations*	
09/11/72-08/31/78	FY78:	TOTAL: $239,644
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Maxworthy, T.	HQ-SL/Brunk, W. E. HQ-SL/Mitz, M. A.	31-Atmos Sci

NGR 05-018-180 **University of Southern California** **1639**
Photon-molecule interaction studies of the atmospheric gases

Period	*Obligations*	
08/31/72-04/30/79	FY78: $54,492	TOTAL: $272,346
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Judge, D. L.	HQ-SL/Mitz, M. A. HQ-SL/Brunk, W. E.	31-Atmos Sci

NGR 05-018-181 **University of Southern California** **1640**
Analysis of Pioneer solar wind observations of the interplanetary medium

Period	*Obligations*	
10/25/72-09/30/78	FY78:	TOTAL: $196,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Intriligator, D. S.	HQ-ST/Cauffman, D. P.	13-Physics

NGR 05-018-185 **University of Southern California** **1641**
Study of the structure of magnetopause using simultaneous OGO-5 magnetic field light ion mass

Period	*Obligations*	
06/27/73-06/30/79	FY78:	TOTAL: $25,795
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Intriligator, D. S.	HQ-ST/Cauffman, D. P.	13-Physics

NSG 1221 **University of Southern California** **1642**
Investigation of jet shear layer mechanisms and their phase relation to radiated sound

Period	*Obligations*	
08/05/75-04/30/79	FY78: $35,000	TOTAL: $95,004
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Laufer, J.	LARC/Maestrello, L. LARC/Seiner, J. M.	41-Aero Engr

NSG 1401 **University of Southern California** **1643**
Investigation of an improved theory for the analysis of natural and manmade layered structures

Period	*Obligations*	
03/15/77-04/30/79	FY78: $39,100	TOTAL: $71,297
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Seide, P.	LARC/Stein, M.	41-Aero Engr

NSG 1528 **University of Southern California** **1644**
Remote sensing of ocean pollutants

Period	*Obligations*	
05/01/78-04/30/79	FY78: $50,000	TOTAL: $50,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Walsh, D. Hodara, H.	LARC/Lewis, B. W.	13-Physics

NSG 1536 **University of Southern California** **1645**
Electro-deposition of III-V compounds and their alloys from molten salts with special reference large area solar cells

Period	*Obligations*	
09/01/78-08/31/79	FY78: $44,251	TOTAL: $44,251
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kroger, F. A.	LARC/Conway, E. J. LARC/Walker, G. H.	47-Materials Engr

NSG 5108 **University of Southern California** **1646**
Rocket experiments to measure the solar intensity and profile

Period	*Obligations*	
04/01/76-04/30/79	FY78: $45,416	TOTAL: $211,377
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Judge, D. L. Carlson, R. W.	GSFC/Bissell, E. E. HQ-SL/Murphy, R. E.	13-Physics

NSG 7367 **University of Southern California** **1647**
Complementary pairing of amino acids, Schiff bases and a reverse translation mechanism for the origin of the genetic code under pre-biotic conditions

Period	*Obligations*	
10/01/77-09/30/78	FY78: $63,553	TOTAL: $63,553
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Strehler, B. L.	HQ-SB/Young, R. S.	51-Biology

COLORADO

NSG 3122 **Colorado School of Mines** **1648**
Determination of the mechanism of influence of organic compounds on the thermal instability of fuels

Period	*Obligations*	
11/01/76-10/31/79	FY78:	TOTAL: $74,634
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Daniel, S. R. Gary, J. H.	LERC/Reynolds, T. W.	12-Chemistry

NAS 1-14538 **Colorado State University** **1649**
Medium field-of-view sensor definition study for an earth radiation budget satellite system

Period	*Obligations*	
07/26/76-09/15/78	FY78: $22,000	TOTAL: $85,647
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
VonDerHaar, T. H.	LARC/Cooper, J. E.	31-Atmos Sci

NAS 1-15129 **Colorado State University** **1650**
Halogen occultation experiments program development

Period	*Obligations*	
10/12/77-10/11/78	FY78: $34,990	TOTAL: $34,990
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Crutzen, P. J.	LARC/Russell, J. M., III LARC/Brockman, P.	31-Atmos Sci

NAS 5-22959 **Colorado State University** 1651
Earth radiation budget sensor support

Period	*Obligations*	
01/23/76-01/23/79	FY78: $53,000	TOTAL: $98,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
VonDerHaar, T. H.	GSFC/Nelson, D.	39-Env Sci, NEC

NAS 5-25081 **Colorado State University** 1652
Develop methods for monitoring drought impact from LANDSAT

Period	*Obligations*	
05/08/78-11/07/79	FY78: $75,000	TOTAL: $75,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Maxwell, E. L.	GSFC/Tucker, C. J.	39-Env Sci, NEC

NAS 8-31347 **Colorado State University** 1653
Assessment of geophysical flows for zero-gravity simulation

Period	*Obligations*	
05/01/75-09/30/76	FY78:	TOTAL: $52,529
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Winn, C. B.	MSFC/Fichtl, G. H.	49-Engr, NEC
Thompson, E.	MSFC/Camp, D. W.	

NAS 8-31673 **Colorado State University** 1654
Zero-gravity aerosol behavior

Period	*Obligations*	
09/08/75-01/08/78	FY78:	TOTAL: $49,878
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Edwards, H. W.	MSFC/Fichtl, G. H.	46-Mech Engr
	MSFC/Morgan, S. H.	

NAS 8-31688 **Colorado State University** 1655
Study of zero-gravity two-phase turbulence

Period	*Obligations*	
11/06/75-05/31/78	FY78:	TOTAL: $55,549
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sandhorn, V. A.	MSFC/Fichtl, G. H.	44-Civil Engr
	MSFC/Camp, D. W.	

NCA 2-165801 **Colorado State University** 1656
Stability of numerical schemes that contain a mesh refinement

Period	*Obligations*	
02/01/78-01/31/79	FY78: $12,000	TOTAL: $12,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Thomas, J. W.	ARC/Steger, J. L.	21-Mathematics

NCA 2-165901 **Colorado State University** 1657
Applications of Gaussian collocation to the solution of the compressible Navier/Stokes equations

Period	*Obligations*	
10/01/78-09/30/79	FY78: $10,000	TOTAL: $10,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Prenter, P. M.	ARC/Murphy, J. D.	21-Mathematics

NGR 06-002-095 **Colorado State University** 1658
Combustion instability with partial length acoustic lines

Period	*Obligations*	
12/02/69-11/30/78	FY78:	TOTAL: $334,760
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mitchell, C. E.	LERC/Priem, R. J.	42-Astro Engr

NGR 06-002-098 **Colorado State University** 1659
Atmospheric transport processes as evaluated from Nimbus III satellite data

Period	*Obligations*	
04/13/70-11/30/78	FY78: $40,000	TOTAL: $349,856
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Reiter, W. R.	GSFC/Theon, J. S.	31-Atmos Sci

NGR 06-002-102 **Colorado State University** 1660
Studies of radiation measurements from polar and geosynchronous satellites

Period	*Obligations*	
09/23/70-07/31/78	FY78: $27,429	TOTAL: $416,429
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
VonDerHaar, T. H.	GSFC/Curran, R. J.	31-Atmos Sci

NGR 06-002-112 **Colorado State University** 1661
An experimental investigation of hollow cathode discharge start-up and operation

Period	*Obligations*	
12/21/70-12/01/78	FY78: $80,509	TOTAL: $462,405
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wilbur, P. J.	LERC/Kerslake, W. R.	46-Mech Engr

NGR 06-002-147 **Colorado State University** 1662
Theoretical investigations on plasma processes in the Kaufman thruster

Period	*Obligations*	
04/14/72-10/31/77	FY78:	TOTAL: $123,129
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wilhelm, H. E.	LERC/Mantenieks, M. A.	42-Astro Engr
Hong, S. H.		

NGR 06-002-159 **Colorado State University** 1663
Bulk properties of atomic triplet hydrogen & high pressure equation of state for solid hydrogen

Period	*Obligations*	
12/04/72-02/15/79	FY78: $29,095	TOTAL: $149,404
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Etters, R. D.	LERC/Brown, G. V.	13-Physics

NGR 06-002-191 **Colorado State University** 1664
Impact studies on computer needs for a whole earth dynamical model

Period	*Obligations*	
05/01/74-12/31/78	FY78: $36,512	TOTAL: $122,734
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Thompson, E. G.	GSFC/Carpenter, L. H.	
Young, C.		32-Geological Sci

NSG 2232 **Colorado State University** 1665
Effects of the hypokinetic state on bioenergetic balance using the rat as a model mammalian system

Period	*Obligations*	
05/01/77-04/30/79	FY78: $25,000	TOTAL: $50,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Jordan, J. P.	ARC/Holton, E. M.	51-Biology
Schatte, C.		

NSG 2253 **Colorado State University** 1666
Transfer of air from the troposphere to the stratosphere in the vicinity of North Polar front jet streams

Period	*Obligations*	
09/01/77-12/31/78	FY78: $7,741	TOTAL: $12,901
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Reiter, E. R.	ARC/Shimazaki, T.	31-Atmos Sci

NSG 2287 **Colorado State University** 1667
Velocity measurements by laser resonance fluorescence from a single atom

Period	*Obligations*	
12/01/77-01/01/79	FY78: $37,000	TOTAL: $37,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
She, C. Y.	ARC/Billman, K. W.	13-Physics
Fairbanks, W. M., Jr.		

NSG 3011 **Colorado State University** 1668
Experimental investigations of argon and xenon ion sources

Period	*Obligations*	
07/01/74-10/30/78	FY78:	TOTAL: $200,960
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kaufman, H. R.	LERC/Rawlin, V. K.	42-Astro Engr
Wilbur, P. J.		

NSG 3038 **Colorado State University** 1669
Plasma interaction between ion thruster and solar array

Period	*Obligations*	
09/01/74-12/31/77	FY78:	TOTAL: $50,921
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kaufman, H. R.	LERC/Domitz, S.	19-Phys Sci, NEC
Wilbur, P. J.		

NSG 3060 **Colorado State University** 1670
Experimental measurement of thermal energy charge-transfer cross-sections of interest in rare-gas metal-vapor lasers

Period	*Obligations*	
03/01/75-09/30/78	FY78: $5,983	TOTAL: $87,805
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Collins, G. J.	LERC/Chubb, D. L.	13-Physics
	LERC/Michels, C. J.	

NSG 3086 **Colorado State University** 1671
Industrial ion source technology

Period	*Obligations*	
11/15/75-12/15/78	FY78: $45,354	TOTAL: $145,265
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kaufman, H. R.	LERC/Mirtich, M. J.	13-Physics
Wilbur, P. J.	LERC/Banks, B. A.	
Sites, J. R.		

NSG 3127 **Colorado State University** 1672
Effects of turbulence on laminar separation of aerodynamic surfaces such as airfoils blading

Period	*Obligations*	
10/01/76-11/29/78	FY78: $69,232	TOTAL: $119,232
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sadeh, W. Z.	LERC/Sockol, P. M.	41-Aero Engr
	LERC/Sandercock, D. M.	

NSG 3145 **Colorado State University** 1673
Laboratory simulation of irradiation-induced dielectric breakdown in spacecraft charging

Period	*Obligations*	
04/01/77-04/01/79	FY78: $49,795	TOTAL: $95,490
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Yadlowsky, E. J.	LERC/Stevens, N. J.	13-Physics
Churchill, R. J.		

NSG 3167 **Colorado State University** 1674
Amorphous silicon by neutralized ion beam sputtering

Period	*Obligations*	
11/01/77-05/01/79	FY78:	TOTAL: $32,380
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sites, J. R.	LERC/Sater, B. L.	13-Physics
Greenberg, A. S.	LERC/Banks, B. A.	

NSG 3196 **Colorado State University** 1675
Space environmental effects on high voltage solar arrays

Period	*Obligations*	
05/15/78-05/14/79	FY78: $39,331	TOTAL: $39,331
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kaufman, H. R.	LERC/Grier, N. T.	13-Physics
Yadlowsky, E. J.	LERC/Stevens, N. J.	

NSG 5011 **Colorado State University** 1676
Satellite support to weather modification

Period	*Obligations*	
06/15/74-01/17/78	FY78:	TOTAL: $142,299
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cotton, W. R.	GSFC/Adler, R. F.	31-Atmos Sci
Grant, L. O.		
VonDerHaar, T. H.		

NSG 5073 **Colorado State University** 1677
Project NOWCAST (short term forecasting of weather)

Period	*Obligations*	
12/01/75-12/31/78	FY78:	TOTAL: $157,648
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Marlatt, W. E.	GSFC/Neil, E. A.	31-Atmos Sci

NSG 5258 **Colorado State University** **1678**
Tropical cyclone intensities from satellite microwave data

Period	*Obligations*	
04/01/78-03/31/79	FY78: $14,814	TOTAL: $14,814
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
VonDerHaar, T. H. Kidder, S. Q.	GSFC/Rodgers, E. B.	31-Atmos Sci

NSG 5259 **Colorado State University** **1679**
Numerical simulation of Vertical Temperature Profile Radiometer (VTPR) temperature retrievals in a severe storm environment

Period	*Obligations*	
04/01/78-03/31/79	FY78: $31,914	TOTAL: $31,914
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
VonDerHaar, T. H. Hillger, D. W.	GSFC/Arking, A.	31-Atmos Sci

NSG 9045 **Colorado State University** **1680**
Effects of heavy ions on optic tissues

Period	*Obligations*	
10/01/76-12/31/78	FY78: $65,000	TOTAL: $125,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lett, J. T.	JSC/Hoffman, R. A.	59-Life Sci, NEC

NAS 9-15276 **Fort Lewis College** **1681**
Development of a winter wheat adjustable calendar model

Period	*Obligations*	
02/15/77-08/31/79	FY78: $28,838	TOTAL: $51,653
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Baker, J. R.	JSC/Browne, I. D.	13-Physics

NAS 2-8816 **University of Colorado - Boulder** **1682**
Design and development of a Pioneer/Venus orbiting ultraviolet spectrometer

Period	*Obligations*	
04/01/75-08/31/78	FY78: $15,000	TOTAL: $810,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Stewart, A. I.	ARC/Sinnott, D. B. ARC/Sperans, J.	19-Phys Sci, NEC

NAS 2-9477 **University of Colorado - Boulder** **1683**
Pioneer/Venus data analysis of the orbiter ultraviolet spectrometer experiment

Period	*Obligations*	
08/30/77-09/30/78	FY78: $83,154	TOTAL: $153,154
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Stewart, I.	ARC/Hall, C. F.	19-Phys Sci, NEC

NAS 5-11405 **University of Colorado - Boulder** **1684**
University of Colorado ultraviolet nitric oxide experiment for atmosphere Explorer

Period	*Obligations*	
03/17/71-09/30/79	FY78: $90,000	TOTAL: $1,050,785
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Stewart, A. I.	GSFC/Rice, C. F.	31-Atmos Sci

NAS 5-22409 **University of Colorado - Boulder** **1685**
Reduction and analysis of data from the OSO-1 high resolution ultraviolet spectrometer experiment

Period	*Obligations*	
06/26/75-09/30/79	FY78: $284,121	TOTAL: $1,517,247
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Barth, C. A.	GSFC/Gemmell, J. D.	31-Atmos Sci

NAS 5-22833 **University of Colorado - Boulder** **1686**
Theoretical calculations of spectral features in the expanding envelopes of early-type stars

Period	*Obligations*	
11/03/75-01/01/79	FY78: $25,000	TOTAL: $66,780
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Conti, P. S.	GSFC/Boggess, A.	11-Astronomy

NAS 5-23274 **University of Colorado - Boulder** **1687**
Development of models for physical properties of stellar chromospheres

Period	*Obligations*	
08/01/73-10/01/78	FY78: $25,000	TOTAL: $89,528
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Linsky, J. L.	GSFC/Boggess, A.	11-Astronomy

NAS 5-23771 **University of Colorado - Boulder** **1688**
Design study of radio physics experiment preamplifiers

Period	*Obligations*	
10/18/76-12/30/76	FY78:	TOTAL: $3,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Warwick, J. W.	GSFC/Alexander, J. K.	11-Astronomy

NAS 5-23808 **University of Colorado - Boulder** **1689**
AE-E backscatter ultraviolet experiment short term data reduction and analysis

Period	*Obligations*	
11/22/76-12/31/78	FY78: $37,993	TOTAL: $92,656
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Stewart, A. I.	GSFC/Gustafson, C. GSFC/Kupperian, J. E., Jr.	31-Atmos Sci

NAS 8-31958 **University of Colorado - Boulder** **1690**
Study of geophysical fluid dynamics with electro-hydrodynamics polarization forces

Period	*Obligations*	
03/26/76-08/31/81	FY78: $75,000	TOTAL: $165,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hart, J. E.	MSFC/Jones, C. T. MSFC/Fichtl, G. H.	39-Env Sci, NEC

NAS 8-32364 **University of Colorado - Boulder** **1691**
Study of the solar corona using radio observations and Skylab observations

Period	*Obligations*	
02/01/77-01/31/78	FY78:	TOTAL: $15,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Dulk, G. A.	MSFC/Bass, B. G.	11-Astronomy

NAS 8-33084 **University of Colorado - Boulder** **1692**
A study of stellar coronae using the HEAO-A spacecraft

Period	*Obligations*	
06/16/78-06/15/79	FY78: $9,900	TOTAL: $9,900
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Linsky, J. L. Ayres, T. R.	MSFC/Dailey, C. C.	11-Astronomy

NASW 3103 **University of Colorado - Boulder** **1693**
Earth dynamics summer workshop on the application of space techniques to geodynamics

Period	*Obligations*	
09/27/77-12/01/77	FY78: $24,570	TOTAL: $24,570
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wyss, M. Smith, M. L.	HQ-ER/Murphy, J. P.	32-Geological Sci

NGL 06-003-052 **University of Colorado - Boulder** **1694**
Theoretical and experimental research program in physics of planetary atmospheres

Period	*Obligations*	
06/28/66-06/30/80	FY78: $349,220	TOTAL: $4,248,467
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Barth, C. A.	HQ-SL/Brunk, W. E. HQ-SL/Quaide, W. L.	31-Atmos Sci

NGL 06-003-057 **University of Colorado - Boulder** **1695**
Basic research in solar physics

Period	*Obligations*	
09/05/67-09/31/78	FY78: $100,000	TOTAL: $993,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gebbie, K. B.	HQ-ST/Bohlin, J. D.	13-Physics

NGL 06-003-200 **University of Colorado - Boulder** **1696**
Application of space technology to practical problems such as those currently facing the mountain sections of the state of Colarado

Period	*Obligations*	
07/11/72-04/30/81	FY78: $100,000	TOTAL: $725,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ives, J. D.	HQ-ET/Vitale, J. A.	39-Env Sci, NEC

NGR 06-003-069 **University of Colorado - Boulder** **1697**
Solar physics research

Period	*Obligations*	
11/29/67-06/30/78	FY78:	TOTAL: $1,142,838
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Barth, C. A.	GSFC/Bissell, E. E.	11-Astronomy

NGR 06-003-127 **University of Colorado - Boulder** **1698**
Data reduction-coordinated experiments

Period	*Obligations*	
08/18/69-09/30/78	FY78: $115,000	TOTAL: $996,906
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Barth, C. A.	HQ-SL/Dwornik, S. E. HQ-ET/Boyce, J. M.	31-Atmos Sci

NGR 06-003-176 **University of Colorado - Boulder** **1699**
Rocket research program in stellar ultraviolet astronomy

Period	*Obligations*	
12/29/71-01/31/79	FY78:	TOTAL: $353,246
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lillie, C. F.	GSFC/Bissell, E. E. HQ-SC/Rosendhal, J. D.	11-Astronomy

NGR 06-003-179 **University of Colorado - Boulder** **1700**
OAO-II data analysis program

Period	*Obligations*	
06/07/71-09/30/78	FY78:	TOTAL: $55,600
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lillie, C. F.	HQ-SC/Roman, N. G.	11-Astronomy

NGR 06-003-181 **University of Colorado - Boulder** **1701**
Lunar sample analysis

Period	*Obligations*	
06/24/71-01/31/79	FY78:	TOTAL: $160,370
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Larson, E. E.	JSC/Harris, J. W.	13-Physics

NSG 1476 **University of Colorado - Boulder** **1702**
Error detection in HAL/S program

Period	*Obligations*	
12/01/77-02/28/79	FY78: $66,987	TOTAL: $66,987
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fosdick, L. D. Riddle, W. E.	LARC/Senn, E. H. LARC/Straeter, T. A.	49-Engr, NEC

NSG 1489 **University of Colorado - Boulder** **1703**
Research in models covering microprocessor arrays for finite element structural analysis

Period	*Obligations*	
01/16/78-01/15/79	FY78: $54,485	TOTAL: $54,485
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Jordan, H. F.	LARC/Loendorf, D. D.	49-Engr, NEC

NSG 2128 **University of Colorado - Boulder** **1704**
Self-synchronizing schlieren photography and interferometry for the visualization of unsteady transonic flows

Period	*Obligations*	
12/01/75-10/31/79	FY78: $21,179	TOTAL: $58,937
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kadlec, R. A.	ARC/Davis, S. S.	41-Aero Engr

NSG 2248 **University of Colorado - Boulder** **1705**
Heterogeneous chemistry: Association reactions, cluster formation, and surface phenomena

Period	*Obligations*	
07/01/77-06/30/79	FY78: $54,882	TOTAL: $78,595
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Castleman, A. W.	ARC/Whitten, R. C.	12-Chemistry

NSG 3181 **University of Colorado - Boulder** **1706**
Effect of contraction on turbulence
Period 01/16/78-01/15/79 *Obligations* FY78: $40,000 TOTAL: $40,000
Prin. Invest. Uberoi, M. S. *NASA Tech. Officer* LERC/Groeneweg, J. F. *CASE Category* 41-Aero Engr

5098 **University of Colorado - Boulder** **1707**
Copernicus observations of OE and OEF stars
Period 03/01/76-09/30/77 *Obligations* FY78: TOTAL: $7,979
Prin. Invest. Conti, P. S. *NASA Tech. Officer* GSFC/Kupperian, J. E., Jr. *CASE Category* 11-Astronomy

NSG 5103 **University of Colorado - Boulder** **1708**
Rocket research in the ultraviolet airglow and aurora of planetary atmospheres
Period 02/01/76-03/31/79 *Obligations* FY78: $199,992 TOTAL: $549,986
Prin. Invest. Barth, C. A. *NASA Tech. Officer* GSFC/Bissell, E. E. HQ-SL/Murphy, R. E. *CASE Category* 19-Phys Sci, NEC

NSG 5124 **University of Colorado - Boulder** **1709**
Investigation of photon-counting imaging detector for space telescope
Period 09/15/76-01/15/78 *Obligations* FY78: TOTAL: $128,015
Prin. Invest. Lawrence, G. M. *NASA Tech. Officer* GSFC/Kelsall, T. *CASE Category* 45-Elec Engr

NSG 5147 **University of Colorado - Boulder** **1710**
Study of mass flow in the massive spectroscopic binary
Period 01/01/77-12/31/77 *Obligations* FY78: TOTAL: $1,300
Prin. Invest. Barlow, M. J. *NASA Tech. Officer* GSFC/Kupperian, J. E., Jr. *CASE Category* 11-Astronomy

NSG 5153 **University of Colorado - Boulder** **1711**
Research of observed and theoretical variations of atmospheric ozone
Period 01/17/77-01/16/79 *Obligations* FY78: $71,077 TOTAL: $135,885
Prin. Invest. London, J. *NASA Tech. Officer* GSFC/Reber, C. A. *CASE Category* 31-Atmos Sci

NSG 5178 **University of Colorado - Boulder** **1712**
Rocket research in solar ultraviolet spectroscopy
Period 06/01/77-02/28/79 *Obligations* FY78: $125,269 TOTAL: $240,477
Prin. Invest. Rottman, G. T. Chipman, E. G. Cushman, G. W. *NASA Tech. Officer* GSFC/Bissell, E. E. HQ-ST/Bohlin, J. D. *CASE Category* 13-Physics

NSG 5211 **University of Colorado - Boulder** **1713**
A study of the flare star Proxima Centauri
Period 10/01/77-09/30/78 *Obligations* FY78: TOTAL: $1,100
Prin. Invest. Linsky, J. L. *NASA Tech. Officer* GSFC/Kupperian, J. E., Jr. *CASE Category* 11-Astronomy

NSG 5246 **University of Colorado - Boulder** **1714**
Analysis of ultraviolet spectrometric data from Copernicus
Period 03/01/78-02/28/79 *Obligations* FY78: $13,500 TOTAL: $13,500
Prin. Invest. Snow, T. P. *NASA Tech. Officer* GSFC/Kupperian, J. E., Jr. *CASE Category* 11-Astronomy

NSG 5300 **University of Colorado - Boulder** **1715**
Research of stellar wind velocity in alpha cam using ultraviolet data from the International Ultraviolet Explorer (IUE)
Period 09/15/78-06/14/79 *Obligations* FY78: $5,997 TOTAL: $5,997
Prin. Invest. Snow, T. P. *NASA Tech. Officer* GSFC/Boggess, A. *CASE Category* 11-Astronomy

NSG 5303 **University of Colorado - Boulder** **1716**
Ultraviolet measurements with high spectral resolution
Period 09/15/78-09/14/79 *Obligations* FY78: $200,607 TOTAL: $200,607
Prin. Invest. Snow, T. P. McClintock, W. E. *NASA Tech. Officer* GSFC/Bissell, E. E. HQ-SC/Rosendhal, J. D. *CASE Category* 11-Astronomy

NSG 7128 **University of Colorado - Boulder** **1717**
Studies of X-ray ultraviolet and optical emission from galactic X-ray sources
Period 03/01/75-05/31/79 *Obligations* FY78: TOTAL: $63,550
Prin. Invest. McCray, R. *NASA Tech. Officer* HQ-SC/Opp, A. G. HQ-SC/Fishman, G. J. *CASE Category* 11-Astronomy

NSG 7130 **University of Colorado - Boulder** **1718**
OSO-I guest investigator program
Period 04/01/75-09/31/78 *Obligations* FY78: $30,000 TOTAL: $156,286
Prin. Invest. Hansen, E. *NASA Tech. Officer* HQ-ST/Bohlin, J. D. *CASE Category* 13-Physics

NSG 7165 **University of Colorado - Boulder** **1719**
Theoretical studies of the solar corona and chromosphere
Period 07/01/75-08/31/78 *Obligations* FY78: $44,987 TOTAL: $128,987
Prin. Invest. Chipman, E. G. *NASA Tech. Officer* HQ-ST/Bohlin, J. D. *CASE Category* 13-Physics

NSG 7166 **University of Colorado - Boulder** **1720**
Physical mechanisms linking solar activity and/or geomagnetic disturbance with the large scale atmospheric circulation

Period	*Obligations*	
07/01/75-06/30/77	FY78:	TOTAL: $15,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Roberts, W. O.	HQ-ST/Timothy, A. F.	13-Physics

NSG 7231 **University of Colorado - Boulder** **1721**
A rocket program to measure minor neutral species in the earth's atmosphere from 30 km to 110 km

Period	*Obligations*	
04/01/76-08/31/78	FY78:	TOTAL: $200,007
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Thomas, R. J.	HQ-ST/Seals, R. K., Jr. HQ-ST/Tilford, S. G.	31-Atmos Sci

NSG 7287 **University of Colorado - Boulder** **1722**
Study of the solar corona using radio observation

Period	*Obligations*	
07/01/76-09/30/78	FY78: $34,000	TOTAL: $44,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Dulk, G. A.	HQ-ST/Bohlin, J. D.	13-Physics

NSG 7291 **University of Colorado - Boulder** **1723**
Research in solar physics with emphasis on empirical non-equilibrium thermodynamics

Period	*Obligations*	
09/01/76-09/31/78	FY78: $29,000	TOTAL: $50,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Thomas, R. N.	HQ-ST/Bohlin, J. D.	13-Physics

NSG 7319 **University of Colorado - Boulder** **1724**
Nutation and polar motion of the earth

Period	*Obligations*	
03/01/77-02/28/79	FY78: $50,000	TOTAL: $84,610
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Smith, M. L.	HQ-SL/Flinn, E. A.	32-Geological Sci

NSG 7344 **University of Colorado - Boulder** **1725**
Construction of a three-wavelength electromagnetic distance-measuring system

Period	*Obligations*	
05/01/77-04/30/79	FY78:	TOTAL: $100,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Levine, J.	HQ-SL/Strickland, A. T.	13-Physics

NSG 7430 **University of Colorado - Boulder** **1726**
Theoretical calculations of spectral features in the expanding envelopes of early-type stars

Period	*Obligations*	
03/01/78-02/28/79	FY78: $21,646	TOTAL: $21,646
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Conti, P. S.	HQ-SC/Roman, N. G. HQ-SC/Rosendhal, J. D.	11-Astronomy

NSG 7459 **University of Colorado - Boulder** **1727**
Development and test of multi-anode microchannel array detector system

Period	*Obligations*	
06/01/78-05/30/79	FY78: $206,144	TOTAL: $206,144
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Timothy, J.	HQ-SC/Rosendhal, J.	13-Physics

NSG 7460 **University of Colorado - Boulder** **1728**
Basic research in stellar & solar physics

Period	*Obligations*	
06/21/78-06/20/79	FY78: $14,760	TOTAL: $14,760
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Thomas, R.	HQ-SC/Rosendhal, J.	13-Physics

NSG 7477 **University of Colorado - Boulder** **1729**
High resolution spectrophotometric observation of interstellar absorption lines

Period	*Obligations*	
07/01/78-06/31/79	FY78: $24,413	TOTAL: $24,413
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Snow, T. P.	HQ-SC/Roman, N. G. HQ-SC/Rosendhal, J. D.	11-Astronomy

NSG 9036 **University of Colorado - Boulder** **1730**
Correlation of strength with q and velocity in lunar rock under simulated conditions

Period	*Obligations*	
11/01/75-01/31/79	FY78: $90,000	TOTAL: $264,464
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Spetzler, H. A.	JSC/Harris, J. W.	32-Geological Sci

NAS 1-14929 **University of Denver** **1731**
Stratospheric aerosol and gas experiment

Period	*Obligations*	
07/18/77-09/30/79	FY78: $25,000	TOTAL: $45,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Murcray, D. G.	LARC/McMaster, L. R. LARC/McCormick, M. P.	31-Atmos Sci

NAS 2-8200 **University of Denver** **1732**
Detectability of atmospheric species

Period	*Obligations*	
04/01/74-12/31/77	FY78:	TOTAL: $460,984
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Murcray, D. G.	ARC/Munoz, R. M.	13-Physics

NAS 5-22981 **University of Denver** **1733**
Measurement of soft energetic X-rays

Period	*Obligations*	
02/18/76-08/31/78	FY78:	TOTAL: $40,550
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Barcus, J. R.	GSFC/Goldberg, R.	19-Phys Sci, NEC

NAS 5-25097 **University of Denver** **1734**
Stratospheric molecular spectral parameter study

Period	*Obligations*	
06/21/78-06/20/80	FY78: $25,000	TOTAL: $25,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Goldman, A.	GSFC/Kunde, V. G.	31-Atmos Sci

NAS 9-15206 **University of Denver** **1735**
Hybridization of biomedical circuitry

Period	*Obligations*	
01/01/77-09/30/78	FY78: $12,285	TOTAL: $72,033
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Venditti, F. P.	JSC/Booher, C. R.	45-Elec Engr

NAS 9-15469 **University of Denver** **1736**
Operational bioinstrumentation system

Period	*Obligations*	
01/01/78-01/01/80	FY78: $201,477	TOTAL: $201,477
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Venditti, F. P.	JSC/Luczkowski, S. M.	46-Mech Engr

NASW 2892 **University of Denver** **1737**
Collection and analysis of information relating to technology transfer and application

Period	*Obligations*	
02/01/76-01/31/77	FY78:	TOTAL: $350,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Johnson, F. D.	HQ-ET/Ault, L. A.	99-Multi-Discip

NASW 2992 **University of Denver** **1738**
Operational test of data flagging and tagging in NASA's STI Facility

Period	*Obligations*	
10/13/76-11/12/77	FY78:	TOTAL: $50,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Unavailable	HQ-ET/Hargrave, C.	22-Computer Science

NASW 3021 **University of Denver** **1739**
Collection and analysis of information relating to technology transfer and application

Period	*Obligations*	
02/01/77-09/30/78	FY78: $8,321	TOTAL: $308,321
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Unavailable	HQ-ET/Ault, L. A.	99-Multi-Discip

NASW 3113 **University of Denver** **1740**
Collection and analysis of information relating to technology transfer and application

Period	*Obligations*	
02/01/78-01/31/79	FY78: $325,000	TOTAL: $325,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Johnson, F. D.	HQ-ET/Ault, L. A.	99-Multi-Discip

NGR 06-004-058 **University of Denver** **1741**
Study of hydromagnetic disturbances in the geomagnetic field at satellite altitudes

Period	*Obligations*	
05/02/68-04/30/77	FY78:	TOTAL: $138,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Patel, V. L.	HQ-ST/Schmerling, E. R.	13-Physics

NGR 06-004-060 **University of Denver** **1742**
Study of physical processes which govern the dynamics of geomagnetically trapped radiation

Period	*Obligations*	
05/08/68-05/31/78	FY78:	TOTAL: $250,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Roederer, J. G.	HQ-ST/Taylor, W. W. HQ-ST/Schmerling, E. R.	13-Physics

NSG 1405 **University of Denver** **1743**
Theoretical simulations of solar spectra in the middle ultraviolet and visible for atmospheric trace constituents measurements

Period	*Obligations*	
03/15/77-04/14/79	FY78: $39,531	TOTAL: $78,023
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Goldman, A. Fernald, F. G. Murcray, D. G.	LARC/McCormick, M. P. LARC/Goad, J. H., Jr.	31-Atmos Sci

NSG 1432 **University of Denver** **1744**
Ground monitoring of atmospheric constituents by high resolution infrared solar spectroscopy

Period	*Obligations*	
07/11/77-07/10/79	FY78: $59,874	TOTAL: $159,874
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Murcray, D. G.	LARC/Orr, H. D. LARC/Russell, J. M., III	39-Env Sci, NEC

NSG 1439 **University of Denver** **1745**
An attempt to measure stratospheric constituents by means of solar occultation measurements in region 0.300um-0.310um

Period	*Obligations*	
07/21/77-01/20/79	FY78:	TOTAL: $35,452
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Murcray, D. G.	LARC/McCormick, M. P. LARC/Goad, J. H., Jr.	31-Atmos Sci

NSG 1557 **University of Denver** **1746**
Balloon-borne spectrometer measurements of UV-visible solar limb extinction

Period	*Obligations*	
08/15/78-08/14/79	FY78: $20,018	TOTAL: $20,018
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Murcray, D. G. Goldman, A. Williams, W. J.	LARC/McCormick, M. P. LARC/Goad, J. H., Jr.	31-Atmos Sci

COLORADO (Continued)

NSG 7271 **University of Denver** **1747**
An investigation of the variability in the stratospheric dust layer as related to the Fuego volcanic event

Period	*Obligations*	
09/01/76-02/28/79	FY78: $40,000	TOTAL: $94,094
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fernald, F. G.	HQ-ST/Newton, G. P. HQ-ST/Tilford, S. G.	31-Atmos Sci

NSG 7354 **University of Denver** **1748**
Measurements of the stratospheric distribution of several constituents of interest in the photo chemistry of the ozone layer as part of STRATCOM VIII

Period	*Obligations*	
06/01/77-10/31/78	FY78:	TOTAL: $44,595
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Murcray, D. G.	HQ-ST/Seals, R. K., Jr. HQ-ST/Tilford, S. G.	31-Atmos Sci

NSG 806 **University of Southern Colorado** **1749**
Environmental stress cracking of polymers

Period	*Obligations*	
10/01/76-02/27/79	FY78: $18,567	TOTAL: $47,863
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mahan, K. I.	KSC/Bryan, C. J.	12-Chemistry

NSG 2048 **University of Southern Colorado** **1750**
Technology research for strapdown inertial experiments

Period	*Obligations*	
09/15/74-09/30/79	FY78: $82,203	TOTAL: $260,499
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Jenkins, R. Carestia, R. A.	ARC/Hruby, R. J.	41-Aero Engr

NSG 9051 **University of Southern Colorado** **1751**
Electron microprobe study of lunar and planetary zoned plagioclase feldspars

Period	*Obligations*	
02/01/77-01/31/79	FY78: $26,088	TOTAL: $51,088
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Smith, R. K.	JSC/Lofgren, G.	19-Phys Sci, NEC

CONNECTICUT

NGR 07-010-002 **Fairfield University** **1752**
Investigation of energy deposition processes in the upper atmosphere, and the interaction between the mesosphere and the thermosphere

Period	*Obligations*	
04/24/68-11/30/78	FY78:	TOTAL: $64,431
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McElaney, J. H. Khadgavi, A.	GSFC/Heath, D. F.	31-Atmos Sci

NASW 3059 **University of Connecticut** **1753**
Operation of an industrial applications center

Period	*Obligations*	
01/01/77-12/31/77	FY78:	TOTAL: $331,900
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wilde, D.	HQ-ET/Bivins, R. G.	99-Multi-Discip

NASW 3191 **University of Connecticut** **1754**
Operation of an industrial applications center

Period	*Obligations*	
01/01/78-12/31/78	FY78: $340,000	TOTAL: $340,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Unavailable	HQ-ET/Bivins, R. G.	99-Multi-Discip

NSG 5075 **University of Connecticut** **1755**
Modelling the terrestrial hydrology of the global atmosphere

Period	*Obligations*	
08/17/75-01/31/79	FY78: $52,228	TOTAL: $151,808
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bock, P.	GSFC/Halem, M.	31-Atmos Sci

NSG 5179 **University of Connecticut** **1756**
Research of the shuttle assisted hydrology program

Period	*Obligations*	
06/01/77-10/15/77	FY78:	TOTAL: $14,353
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bock, P.	GSFC/Salomonson, V. V. GSFC/Rango, A.	32-Geological Sci

NSG 7450 **University of Connecticut** **1757**
Factors affecting assimilatory nitrate reduction by prokaryotes

Period	*Obligations*	
06/01/78-05/31/79	FY78: $34,389	TOTAL: $34,389
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Leadbetter, E. R.	HQ-SB/Young, R. S.	51-Biology

NGL 07-004-005 **Yale University** **1758**
Low-power, low-speed data storage and processing equipment

Period	*Obligations*	
01/01/71-11/30/80	FY78: $30,000	TOTAL: $836,499
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Barker, R. C.	GSFC/Schaefer, D. H.	45-Elec Engr

NGL 07-004-043 **Yale University** **1759**
Chemical reactions in the electron-volt region

Period	*Obligations*	
10/26/65-09/30/79	FY78: $2,067	TOTAL: $497,744
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cross, R. J., Jr.	HQ-SL/Fellows, R. F. HQ-SL/Brunk, W. E.	31-Atmos Sci

CONNECTICUT (Continued)

NGR 07-004-009 **Yale University** **1760**
Determination & analysis of properties & characteristics of extremely small free-living self-replicating cells

Period	*Obligations*	
11/01/61-10/31/77	FY78:	TOTAL: $316,708
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Morowitz, H. J.	HQ-SB/Young, R. S.	51-Biology

NSG 2185 **Yale University** **1761**
Early detection of acute respiratory infections

Period	*Obligations*	
10/01/76-09/30/79	FY78: $30,000	TOTAL: $65,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Evans, A. S. Kraus, G.	ARC/Mandel, A. D.	52-Clinical Med

NSG 3107 **Yale University** **1762**
Deposition of condensible impurities on surfaces immersed in hot gases

Period	*Obligations*	
07/15/76-07/14/79	FY78: $30,000	TOTAL: $89,985
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rosner, D. E.	LERC/Fryburg, G. C. LERC/Kohl, F. J.	47-Materials Engr

NSG 3169 **Yale University** **1763**
Experimentation studies of the formation/deposition of sodium sulfate in/from combustion gases

Period	*Obligations*	
11/15/77-11/15/79	FY78: $94,000	TOTAL: $94,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rosner, D. E.	LERC/Fryburg, G. C. LERC/Kohl, F. J.	12-Chemistry

NSG 7290 **Yale University** **1764**
Membranes and circadian rhythms in plants

Period	*Obligations*	
10/01/76-09/30/78	FY78: $50,000	TOTAL: $89,420
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Galston, A. W.	HQ-SB/Halstead, T. W. HQ-SB/Young, R. S.	51-Biology

DELAWARE

NGR 08-002-001 **Delaware State College** **1765**
Research on the specific heat of platinum

Period	*Obligations*	
09/25/69-06/30/78	FY78:	TOTAL: $24,767
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Helmy, E. M.	HQ-LU/Pohly, J. G.	13-Physics

NAS 6-2820 **University of Delaware** **1766**
Measurement of ocean surface microstructure in a wind generated wave field

Period	*Obligations*	
03/28/77-11/27/78	FY78:	TOTAL: $13,999
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wu, J.	WFC/Huang, N. E. WFC/Parsons, C. L.	33-Oceanography

NSG 1304 **University of Delaware** **1767**
Damage repair technology in composite materials

Period	*Obligations*	
05/01/76-04/30/79	FY78: $64,531	TOTAL: $156,975
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Pipes, R. B. Wilson, D. W.	LARC/Deaton, J. W. LARC/Hoffman, E. L.	46-Mech Engr

NSG 1398 **University of Delaware** **1768**
Definition of an operational system for monitoring ocean waste disposal in the New York bight

Period	*Obligations*	
03/01/77-06/30/78	FY78:	TOTAL: $3,630
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Klemas, V.	LARC/Bowker, D. E. LARC/Pearson, A. O.	39-Env Sci, NEC

NSG 1409 **University of Delaware** **1769**
Elevated temperature bolted joint test technology in composite materials

Period	*Obligations*	
04/01/77-12/31/78	FY78: $40,104	TOTAL: $71,864
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Pipes, R. B. Wilson, D. W.	LARC/Cooper, P. A.	42-Astro Engr

NSG 1433 **University of Delaware** **1770**
Satellite surveillance of coastal environment and monitoring of sludge dump sites

Period	*Obligations*	
09/01/77-11/30/78	FY78:	TOTAL: $19,892
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Klemas, V. Philpot, W.	LARC/Bowker, D. E. LARC/Pearson, A. O.	39-Env Sci, NEC

NSG 1488 **University of Delaware** **1771**
Structural optimization of hat-stiffened panels of composite materials subjected to thermal and in-plane mechanical loads

Period	*Obligations*	
02/01/78-06/30/79	FY78: $25,680	TOTAL: $25,680
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Vinson, J. R.	LARC/McWithey, R. R. LARC/Cooper, P. A.	42-Astro Engr

DELAWARE (Continued)

NSG 1513 **University of Delaware** **1772**
Investigation of a vortex model of the turbulent boundary layer burst phenomena

Period	*Obligations*	
04/01/78-03/31/79	FY78: $15,000	TOTAL: $15,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Danberg, J. E.	LARC/Bushnell, D. M. LARC/Cary, A. M., Jr.	41-Aero Engr

NSG 3184 **University of Delaware** **1773**
Heat storage in alloy transformation

Period	*Obligations*	
07/01/78-06/30/79	FY78: $91,072	TOTAL: $91,072
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Birchenall, C. E. Harrison, A. J.	LERC/Namkoong, D.	47-Materials Engr

NSG 3189 **University of Delaware** **1774**
Inlet flow distortion in turbomachinery

Period	*Obligations*	
04/01/78-11/31/78	FY78: $25,154	TOTAL: $25,154
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Seidel, B. S.	LERC/Adamczyk, J. J.	41-Aero Engr

NSG 5144 **University of Delaware** **1775**
Ultraviolet studies of heavy-element abundances in stars

Period	*Obligations*	
12/01/76-11/30/78	FY78:	TOTAL: $1,900
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Shipman, H. L.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 6015 **University of Delaware** **1776**
Voice response systems

Period	*Obligations*	
09/01/76-08/31/77	FY78:	TOTAL: $10,700
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Robinson, D. M.	WFC/Parker, L. C. WFC/Savage, T. J., Jr.	45-Elec Engr

DISTRICT OF COLUMBIA

NSG 7274 **The American University** **1777**
Natural radio source occultation by planetary environments

Period	*Obligations*	
08/01/76-07/31/77	FY78:	TOTAL: $4,887
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Prakash, A.	HQ-SL/Brunk, W. E. HQ-SL/Fellows, R. F.	11-Astronomy

NGR 09-005-063 **The Catholic University of America** **1778**
Interaction of the solar wind with the moon

Period	*Obligations*	
04/15/69-05/31/79	FY78: $30,000	TOTAL: $234,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Whang, Y. C.	HQ-ST/Taylor, W. W. HQ-ST/Schmerling, E. R.	13-Physics

NGR 09-005-099 **The Catholic University of America** **1779**
Experimental study of the structure of turbulence with intermediate range of Reynolds number

Period	*Obligations*	
09/19/72-12/01/77	FY78:	TOTAL: $35,792
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ling, S. C.	LERC/Deissler, R. G.	41-Aero Engr

NSG 5066 **The Catholic University of America** **1780**
Research of solar hard X-rays and gamma-rays

Period	*Obligations*	
05/01/75-04/30/79	FY78: $16,992	TOTAL: $73,413
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Werntz, C.	GSFC/Dennis, B. R.	13-Physics

NSG 5111 **The Catholic University of America** **1781**
Research of properties of material in the submillimeter wave region

Period	*Obligations*	
09/01/76-08/31/79	FY78:	TOTAL: $70,647
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lally, J. Meister, R.	GSFC/McAvoy, N. GSFC/McElroy, J. H.	13-Physics

NSG 5173 **The Catholic University of America** **1782**
Atom-molecule reactions of chemical importance in the stratosphere

Period	*Obligations*	
06/01/77-05/31/79	FY78: $41,126	TOTAL: $67,976
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hunt, J. B. Michael, J. V. Whytock, D. A.	GSFC/Payne, W. A.	31-Atmos Sci

NSG 7422 **The Catholic University of America** **1783**
Expansion of the solar wind from coronal holes

Period	*Obligations*	
04/01/78-03/31/79	FY78: $40,000	TOTAL: $40,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Whang, Y. C.	HQ-ST/Bohlin, J. D.	13-Physics

NAS 1-14605 **George Washington University** **1784**
Experimental and analytical engineering and applied science support of Langley Research Center programs

Period	*Obligations*	
09/02/76-09/01/81	FY78: $54,139	TOTAL: $129,328
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Liebowitz, H. Whitesides, J. L.	LARC/Duberg, J. E. LARC/Erickson, W. D.	41-Aero Engr

NAS 5-23809 **George Washington University** **1785**
Microwave sensing of snow cover wetness

Period	*Obligations*	
11/26/76-01/31/78	FY78:	TOTAL: $15,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lang, R. H.	GSFC/Levine, D. M.	19-Phys Sci, NEC

NAS 5-24431 **George Washington University** **1786**
Concatenated coding system

Period	*Obligations*	
02/22/78-04/22/79	FY78: $21,658	TOTAL: $21,658
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Helgert, H. J.	GSFC/Rende, J. V. GSFC/Laios, S. C.	45-Elec Engr

NASW 2890 **George Washington University** **1787**
Operation of a scientific communication system for planetary quarantine

Period	*Obligations*	
01/01/76-01/15/77	FY78:	TOTAL: $58,633
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Unavailable	HQ-SB/Young, R. S.	75-Political Sci

NASW 3029 **George Washington University** **1788**
Operation of a scientific communication system for planetary quarantine

Period	*Obligations*	
01/16/77-01/25/78	FY78:	TOTAL: $60,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Head, M. C.	HQ-SB/Halstead, T. W.	75-Political Sci

NASW 3165 **George Washington University** **1789**
Scientific communication in planetary biology and bioscience

Period	*Obligations*	
04/17/78-05/15/79	FY78: $48,077	TOTAL: $48,077
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Waters, E.	HQ-SB/Halstead, T. W.	51-Biology

NGL 09-010-053 **George Washington University** **1790**
Research in space-related areas in engineering and applied science

Period	*Obligations*	
12/18/68-08/31/79	FY78:	TOTAL: $1,150,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Liebowitz, H.	LARC/Duberg, J. E. LARC/Erickson, W. D.	49-Engr, NEC

NGR 09-010-064 **George Washington University** **1791**
Research in acoustics at the NASA Langley Research Center

Period	*Obligations*	
01/29/70-01/31/79	FY78: $77,778	TOTAL: $1,405,455
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Liebowitz, H.	LARC/Margolis, K.	41-Aero Engr

NGR 09-010-074 **George Washington University** **1792**
Programs of research in flight sciences

Period	*Obligations*	
04/01/71-05/31/79	FY78: $177,484	TOTAL: $1,187,084
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Liebowitz, H.	LARC/Bobbitt, P. J. LARC/Mulac, R. W.	41-Aero Engr

NGR 09-010-078 **George Washington University** **1793**
Research programs in structures and dynamics

Period	*Obligations*	
01/06/72-11/30/78	FY78: $204,623	TOTAL: $1,131,423
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Liebowitz, H.	LARC/Anderson, R. A. LARC/McComb, H. G., Jr.	41-Aero Engr

NGR 09-010-085 **George Washington University** **1794**
Aircraft noise reduction research

Period	*Obligations*	
02/21/73-12/31/78	FY78: $66,156	TOTAL: $570,906
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Liebowitz, H.	LARC/Margolis, K. LARC/Morgan, H. G.	41-Aero Engr

NGR 09-010-096 **George Washington University** **1795**
Research program in microwave remote sensing

Period	*Obligations*	
09/01/73-11/30/78	FY78: $30,483	TOTAL: $166,055
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Liebowitz, H.	LARC/Croswell, W. F.	45-Elec Engr

NSG 1026 **George Washington University** **1796**
A graduate research program in environmental modeling

Period	*Obligations*	
03/21/74-10/31/78	FY78: $98,990	TOTAL: $547,790
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Liebowitz, H.	LARC/Callis, L. B., Jr. LARC/Tolson, R. H.	31-Atmos Sci

NSG 1110 **George Washington University** **1797**
Antenna and wave propagation applied to avionics systems

Period	*Obligations*	
10/01/74-12/31/78	FY78: $38,231	TOTAL: $148,731
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Liebowitz, H.	LARC/Bailey, M. C. LARC/Croswell, W. F.	45-Elec Engr

NSG 1155 **George Washington University** **1798**
Studies related to materials flight sciences

Period	*Obligations*	
03/03/75-05/14/79	FY78: $150,388	TOTAL: $492,124
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Liebowitz, H. Esterling, D. M.	LARC/Swann, R. T.	47-Materials Engr

NSG 1161 **George Washington University** **1799**
Research in flight dynamics
Period *Obligations*
06/01/75-10/31/78 FY78: $54,239 TOTAL: $124,985
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Liebowitz, H. LARC/Suit, W. T. 41-Aero Engr
LARC/Queijo, M. J.

NSG 1216 **George Washington University** **1800**
Research in atmospheric science
Period *Obligations*
09/01/75-06/15/79 FY78: $36,000 TOTAL: $151,585
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Liebowitz, H. LARC/Callis, L. B., Jr. 31-Atmos Sci

NSG 1251 **George Washington University** **1801**
Severe storms research
Period *Obligations*
10/01/75-01/31/79 FY78: TOTAL: $138,512
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Liebowitz, H. LARC/Costen, R. C. 31-Atmos Sci
Kaplan, M. L. LARC/Young, G. R.

NSG 1289 **George Washington University** **1802**
Research program in improved fracture toughness determination for aircraft structural materials
Period *Obligations*
03/01/76-12/31/78 FY78: $60,988 TOTAL: $144,978
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Liebowitz, H. LARC/Roderick, G. L.
Jones, D. L. 47-Materials Engr
LARC/Davidson, J. R.

NSG 1338 **George Washington University** **1803**
Assessment of reliability and cost benefit models for fault tolerant airborne computing systems
Period *Obligations*
10/01/76-07/31/78 FY78: $32,623 TOTAL: $108,530
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Gross, D. LARC/Migneault, G. E. 41-Aero Engr

NSG 1415 **George Washington University** **1804**
Statistical characterizations of the fatigue behavior of composite lamina
Period *Obligations*
05/01/77-01/31/79 FY78: $20,117 TOTAL: $60,517
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Yang, J. N. LARC/Roderick, G. L.
Jones, D. L. 47-Materials Engr
LARC/Whitcomb, J. D.

NSG 1438 **George Washington University** **1805**
Research in aeroelasticity in the Joint Institute for Advancement of Flight Sciences at the NASA-Langley Research Center
Period *Obligations*
08/01/77-07/31/78 FY78: TOTAL: $21,958
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Liebowitz, H. LARC/Reed, W. H., III 41-Aero Engr
Runyan, H. L.

NSG 1449 **George Washington University** **1806**
Analysis of three-dimensional stresses near fastener holes in laminated composites
Period *Obligations*
09/01/77-11/13/79 FY78: $38,828 TOTAL: $73,672
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Liebowitz, H. LARC/Crews, J. H., Jr.
47-Materials Engr
LARC/Everett, R. A., Jr.

NSG 1472 **George Washington University** **1807**
Verifiers for commercial aircraft applications
Period *Obligations*
12/01/77-11/30/78 FY78: $25,000 TOTAL: $25,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Maurer, W. D. LARC/Straeter, T. A. 49-Engr, NEC
LARC/Foudriat, E. C.

NSG 1474 **George Washington University** **1808**
Acoustic analysis of the propfan
Period *Obligations*
12/01/77-11/30/78 FY78: $29,447 TOTAL: $29,447
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Liebowitz, H. LARC/Greene, G. C. 13-Physics
Fasassat, F.

NSG 1508 **George Washington University** **1809**
Core graphics system for raster graphics displays
Period *Obligations*
03/15/78-12/31/78 FY78: $17,730 TOTAL: $17,730
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Foley, J. D. LARC/Craidon, J. B. 21-Mathematics

NSG 1555 **George Washington University** **1810**
Studies of radiative transfer in the earth's atmosphere with emphasis on the inference of the radiation budget
Period *Obligations*
08/01/78-07/31/79 FY78: $23,063 TOTAL: $23,063
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Liebowitz, H. LARC/Smith, G. L. 31-Atmos Sci
Barkstrom, B. R. LARC/Suttles, J. T.

NSG 1556 **George Washington University** **1811**
Graphite fiber risk assessment

Period *Obligations*
08/04/78-08/03/79 FY78: $99,059 TOTAL: $99,059

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Gross, D. LARC/Credeur, K. R. 21-Mathematics
Singpurwalla, N. D. LARC/Huston, R. J.
Soland, R. M.

NSG 3130 **George Washington University** **1812**
Videoconferencing for Congress: An experimental application of the communications technology satellite

Period *Obligations*
11/01/76-11/01/78 FY78: $84,903 TOTAL: $146,048

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Wood, F. B. LERC/Jackson, H. D. 99-Multi-Discip
Coates, V. T.

NSG 5109 **George Washington University** **1813**
Decoding and performance of error correcting codes

Period *Obligations*
07/16/76-08/31/79 FY78: $24,155 TOTAL: $72,454

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Helgert, H. J. GSFC/Morakis, J. C. 49-Engr, NEC

NSG 5288 **George Washington University** **1814**
Comparison of passive and active microwave remote sensing

Period *Obligations*
08/01/78-06/30/79 FY78: $20,000 TOTAL: $20,000

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Lang, R. H. GSFC/LeVine, D. M. 45-Elec Engr

NSG 7145 **George Washington University** **1815**
Analysis of the space shuttle decision

Period *Obligations*
06/11/75-08/31/77 FY78: TOTAL: $33,037

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Logsdon, J. M. HQ-AD/Wright, M. D. 75-Political Sci

NASW 3152 **Georgetown University** **1816**
Potential impacts of space utilization

Period *Obligations*
04/01/78-03/31/79 FY78: $15,000 TOTAL: $15,000

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Cheston, P. S. HQ-MT/Puttkamer, J. 99-Multi-Discip

NCA 2-258701 **Georgetown University** **1817**
Neurotransmitter involvement in the central control of the stress response

Period *Obligations*
01/01/77-12/31/78 FY78: TOTAL: $29,976

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Kellar, K. J. ARC/Keil, L. C. 53-Other Medical

NSG 1418 **Georgetown University** **1818**
Research in environmental effects on advanced composites in the Joint Institute for Advancement of Flight Sciences at the NASA Langley Research Center

Period *Obligations*
08/01/77-07/31/78 FY78: TOTAL: $34,080

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Liebowitz, H. LARC/Tenney, D. R. 47-Materials Engr
LARC/Tompkins, S. S.

NAS 5-23799 **Howard University** **1819**
Quality assurance system in clinical practice settings

Period *Obligations*
12/07/76-01/31/79 FY78: TOTAL: $35,000

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Chang, P. GSFC/Alterescu, S. 52-Clinical Med
GSFC/Friedman, D. S.

NAS 5-24242 **Howard University** **1820**
Study of aerodynamics for sounding rockets

Period *Obligations*
07/01/77-09/01/79 FY78: $40,000 TOTAL: $77,877

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Fan, D. N. GSFC/Barrowman, J. S. 41-Aero Engr
GSFC/Mayo, E. E.

NAS 5-24251 **Howard University** **1821**
Study of flexible body interaction

Period *Obligations*
08/08/77-04/08/79 FY78: TOTAL: $19,980

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Choudhury, A. K. GSFC/Hui, P. S. 49-Engr, NEC

NAS 5-24422 **Howard University** **1822**
Recorder tape guidance and drive mechanism analysis

Period *Obligations*
01/16/78-12/31/78 FY78: $24,662 TOTAL: $24,662

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bords, G. GSFC/Hayes, J. M. 46-Mech Engr
GSFC/Paroby, W.

NAS 5-25185 **Howard University** **1823**
Study of tektites and other space related glasses

Period *Obligations*
08/17/78-10/17/79 FY78: $50,000 TOTAL: $50,000

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Thorpe, A. M. GSFC/Alterescu, S. 39-Env Sci, NEC
GSFC/Okeefe, J. A.

NCA 5-21 **Howard University** **1824**
Prefreshman and cooperative education program

Period *Obligations*
06/01/77-06/30/78 FY78: TOTAL: $5,000

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Cox, E. L. GSFC/Mundy, J. R. 99-Multi-Discip

NGL 09-011-017 **Howard University** **1825**
Study of neurohumoral control systems operations in adjustment of ventricular performance

Period	*Obligations*	
04/25/68-01/14/81	FY78: $40,000	TOTAL: $942,398
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cothran, L. N.	ARC/Sandler, H.	53-Other Medical

NGL 09-011-046 **Howard University** **1826**
Investigation of radiation detectors for environmental trace elements

Period	*Obligations*	
04/25/72-03/31/78	FY78:	TOTAL: $33,131
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ferguson, G. A.	HQ-LU/Pohly, J. G.	39-Env Sci, NEC

NGR 09-011-057 **Howard University** **1827**
Electron spectroscopy

Period	*Obligations*	
04/01/74-04/30/79	FY78:	TOTAL: $32,240
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Tsang, T.	GSFC/Yin, L. I.	13-Physics

NGT 09-011-058 **Howard University** **1828**
Training of undergraduate students in sciences and engineering

Period	*Obligations*	
06/01/74-05/31/78	FY78:	TOTAL: $63,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cox, E. L.	HQ-LU/Pohly, J. G.	49-Engr, NEC
	HQ-U/Jenkins, H. G.	

NGT 09-011-060 **Howard University** **1829**
Summer faculty fellowship program in research

Period	*Obligations*	
01/01/78-03/31/79	FY78: $139,450	TOTAL: $139,450
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fan, D. N.	HQ-LU/Carter, C. H.	99-Multi-Discip

NSG 1320 **Howard University** **1830**
Graduate Research program in advanced aerospace structures

Period	*Obligations*	
06/29/76-12/31/78	FY78:	TOTAL: $63,200
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Jones, I. W.	LARC/Horner, G. C.	42-Astro Engr
	LARC/Card, M. F.	

NSG 1414 **Howard University** **1831**
The dynamics and control of large flexible space structures

Period	*Obligations*	
05/16/77-05/15/79	FY78: $50,458	TOTAL: $85,432
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bainum, P. M.	LARC/Pinson, L. D.	49-Engr, NEC
	LARC/Montgomery, R. C.	

NSG 5071 **Howard University** **1832**
Laser induced photoluminiscence studies of primary photochemical production processes of cometary radicals

Period	*Obligations*	
08/01/75-03/31/79	FY78: $15,000	TOTAL: $144,978
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Jackson, W. M.	GSFC/Stief, L. J.	12-Chemistry

NSG 5081 **Howard University** **1833**
Infant weighing scheme

Period	*Obligations*	
10/13/75-01/31/78	FY78:	TOTAL: $26,544
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Deloatch, E. M.	GSFC/Alterescu, S.	53-Other Medical

NSG 5104 **Howard University** **1834**
Determination of bacteria concentration by luminescence assay

Period	*Obligations*	
03/15/76-11/15/76	FY78:	TOTAL: $13,002
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Okrend, H. H.	GSFC/Picciolo, G. L.	51-Biology

NSG 5127 **Howard University** **1835**
Recognition and treatment of coronary heart attacks

Period	*Obligations*	
10/01/76-01/31/78	FY78:	TOTAL: $28,900
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fischmann, E. J.	GSFC/Friedman, D. S.	52-Clinical Med
	GSFC/Chen, W.	

NSG 5158 **Howard University** **1836**
Research of microwave semiconductor devices

Period	*Obligations*	
02/01/77-01/31/79	FY78: $149,550	TOTAL: $299,800
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Deloatch, E. M.	GSFC/Lyons, J. C.	13-Physics
Bhar, T. N.	GSFC/Dargo, D. R.	
Chawdhary, R.		

NSG 5186 **Howard University** **1837**
Research in space sciences

Period	*Obligations*	
07/01/77-06/30/79	FY78:	TOTAL: $150,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Thorpe, A. N.	GSFC/O'Keefe, J. A.	13-Physics
Chung, D.		
Tsang, T.		

NSG 5268 **Howard University** **1838**
Characterization of low intensity X-ray imaging devices

Period	*Obligations*	
04/15/78-04/14/79	FY78: $23,679	TOTAL: $23,679
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ferguson, G. A.	GSFC/Yin, L. I.	53-Other Medical
	GSFC/Trombka, J. I.	

NSG 5295 **Howard University** **1839**
Test for diurnal rainfall variation using Nimbus 5 data

Period	*Obligations*	
08/01/78-07/31/79	FY78: $45,826	TOTAL: $45,826
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gill, T. L.	GSFC/Laughlin, C. R.	21-Mathematics

NSG 7378 **Howard University** **1840**
Photodissociative excitation detection of parent molecules in comets

Period	*Obligations*	
10/15/77-10/14/78	FY78: $47,018	TOTAL: $47,018
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Jackson, W. M.	HQ-SL/Donn, B. D.	12-Chemistry

NSG 9010 **Howard University** **1841**
Theoretical evaluation of linear Kalman filtering techniques for advanced mission state determination

Period	*Obligations*	
07/01/74-12/31/78	FY78:	TOTAL: $30,960
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Choudhury, A. K.	JSC/Savely, R. T.	45-Elec Engr

NGR 09-053-003 **Univ of District of Columbia-Harvard Ga** **1842**
Investigation of problems associated with solid encapsulation of high voltage electronic assemblies

Period	*Obligations*	
04/15/74-04/14/79	FY78: $16,036	TOTAL: $111,474
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Walker, E. L.	GSFC/Westrom, J. L.	39-Env Sci, NEC
	GSFC/Pasciutti, E. R.	

NGR 09-050-001 **Univ of District of Columbia-Mt Vernon** **1843**
Study of detectors for extremely relativistic particles

Period	*Obligations*	
10/07/69-09/30/77	FY78:	TOTAL: $212,149
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Whiteside, H.	GSFC/Ormes, J. F.	13-Physics
Rogers, E. H., Jr.		

NGR 09-050-019 **Univ of District of Columbia-Mt Vernon** **1844**
Determination of heavy metals in sediments and benthic species in relation to nuclear power plant operation

Period	*Obligations*	
02/18/74-04/30/79	FY78: $52,524	TOTAL: $132,283
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wyche, G.	GSFC/Nava, D. F.	39-Env Sci, NEC

NSG 5122 **Univ of District of Columbia-Mt Vernon** **1845**
Research in orbit determination by method of least squares and Kalman filter

Period	*Obligations*	
08/01/76-08/31/79	FY78: $12,559	TOTAL: $25,529
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bakshi, J. S.	GSFC/Lefferts, E. J.	21-Mathematics

NSG 5192 **Univ of District of Columbia-Mt Vernon** **1846**
Excitation cross section measurements of atmospheric interest

Period	*Obligations*	
08/01/77-08/31/79	FY78: $67,851	TOTAL: $107,294
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Morgan, H. D.	GSFC/Mentall, J. E.	13-Physics

NCA 5-77 **Univ of District of Columbia-Van Ness** **1847**
Study the evolution of solar active regions

Period	*Obligations*	
06/16/77-08/16/77	FY78:	TOTAL: $4,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kasten, R.	GSFC/Hobbs, R. W.	11-Astronomy

NCA 5-80 **Univ of District of Columbia-Van Ness** **1848**
Study of the evolution of solar active regions

Period	*Obligations*	
07/01/78-08/30/78	FY78: $4,000	TOTAL: $4,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kasten, R.	GSFC/Hobbs, R. W.	11-Astronomy

NSG 5290 **Univ of District of Columbia-Van Ness** **1849**
Measurement of bi-directional reflected spectra and correlation to agronomic parameters

Period	*Obligations*	
08/01/78-07/31/79	FY78: $26,444	TOTAL: $26,444
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Watlington, R. A.	GSFC/Chappelle, E. W.	19-Phys Sci, NEC

FLORIDA

NGR 10-022-001 **Bethune - Cookman College** **1850**
A study of lagoonal and estuarine processes through the beneficial disposal of solid waste

Period	*Obligations*	
07/26/72-04/30/78	FY78:	TOTAL: $128,138
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Poonai, P.	KSC/Withrow, R. A.	39-Env Sci, NEC

NAS 5-25165 **Florida A&M University** **1851**
Medical application for computer technology

Period	*Obligations*	
08/15/78-07/31/79	FY78: $48,317	TOTAL: $48,317
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fresh, F. A.	GSFC/Alterescu, S.	53-Other Medical
	KSC/Buchanan, P.	

NCA 2-230701 **Florida A&M University** **1852**
Use of campus facilities and services by NASA to support research in chronopharmacology

Period	*Obligations*	
08/01/77-07/31/78	FY78:	TOTAL: $25,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Walker, C. A.	ARC/Winget, C. M.	61-Biol Aspects

NSG 901 **Florida A&M University** **1853**
Electron-impact excitation of molecular nitrogen

Period	*Obligations*	
09/12/74-09/30/78	FY78: $39,288	TOTAL: $118,416
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Jones, H. J.	HQ-LU/Pohly, J. G.	13-Physics
	JPL/Trajmar, S.	

NSG 2029 **Florida A&M University** **1854**
Study of influence of amines on diurnal toxicity of stimulants & depressants

Period	*Obligations*	
07/01/74-09/30/79	FY78:	TOTAL: $168,058
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Walker, C. A.	ARC/Winget, C. M.	59-Life Sci, NEC

NSG 2183 **Florida A&M University** **1855**
Regulation of the adrenal cortex function during stress

Period	*Obligations*	
09/01/76-09/30/79	FY78: $9,500	TOTAL: $69,289
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Soliman, K. F.	ARC/Winget, C. M.	59-Life Sci, NEC

NSG 2311 **Florida A&M University** **1856**
A model system for studies on liver metabolism in space

Period	*Obligations*	
04/01/78-03/31/79	FY78: $29,920	TOTAL: $29,920
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Tolbert, M. E.	ARC/Klein, H. P.	51-Biology

NAS 5-24437 **Florida Atlantic University** **1857**
Extension of instrument telemetry packet flow control sequencing and error control technique study

Period	*Obligations*	
01/30/78-06/01/78	FY78: $4,200	TOTAL: $4,200
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hadlock, F. O.	GSFC/Greene, E. P.	45-Elec Engr
	GSFC/Poland, W. B., Jr.	

NAS 9-15516 **Florida Institute of Technology** **1858**
Photosynthetic carbon reduction of marine grasses exposed to ultraviolet-b irradiation

Period	*Obligations*	
02/17/78-03/01/79	FY78: $18,000	TOTAL: $18,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wells, G. N.	JSC/Nachtwey, D. S.	33-Oceanography

NAS10-8399 **Florida Institute of Technology** **1859**
Hypergolic propellants liquid and vapor disposal study

Period	*Obligations*	
08/08/73-05/11/77	FY78:	TOTAL: $339,882
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bowman, T. E.	KSC/Franks, H. H.	43-Chem Engr
Newman, R. W.	KSC/Dobson, J. L.	

NAS10-9166 **Florida Institute of Technology** **1860**
Toxic chemical waste disposal

Period	*Obligations*	
05/16/77-09/01/78	FY78: $1,498	TOTAL: $56,048
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bowman, T. A.	KSC/Howard, F.	12-Chemistry
Thomas, J. J.		

NAS10-9461 **Florida Institute of Technology** **1861**
Acetylacetone, mmh reaction byproducts, and portable scrubbing aspirator study

Period	*Obligations*	
08/14/78-08/13/79	FY78: $19,858	TOTAL: $19,858
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Thomas, J. J.	KSC/Howard, F. S.	43-Chem Engr

NAS 1-9693 **Florida State University** **1862**
Participation in the science planning for the Viking 1975 missions in the area of meteorology

Period	*Obligations*	
03/23/70-09/30/78	FY78: $26,029	TOTAL: $462,139
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hess, S. K.	LARC/Williams, T. S., Jr.	
	LARC/Glenny, W. R.	32-Geological Sci

NAS 1-14930 **Florida State University** **1863**
Science support for the stratospheric aerosol and gas experiment

Period	*Obligations*	
06/22/77-09/30/79	FY78: $25,000	TOTAL: $50,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Craig, R. A.	LARC/McMaster, L. R.	31-Atmos Sci
	LARC/McCormick, M. P.	

NGR 10-004-041 **Florida State University** **1864**
Microbial activity in non-aqueous systems

Period	*Obligations*	
07/17/72-09/14/76	FY78:	TOTAL: $188,465
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Larock, P. A.	HQ-SB/Young, R. S.	51-Biology

NGR 10-004-056 **Florida State University** **1865**
Infrared absorption from 0.8 to 1.5 microns of Nh3, Ch4 and CO2

Period	*Obligations*	
03/25/69-01/31/79	FY78: $18,251	TOTAL: $263,963
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hunt, R. H.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Quaide, W. L.	

NSG 1329 **Florida State University** **1866**
The role of large scale disturbances in flow surface noise generation

Period	*Obligations*	
07/15/76-03/31/79	FY78: $27,294	TOTAL: $52,594
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Tam, C. K.	LARC/Hardin, J. C.	13-Physics

NSG 7337 **Florida State University** **1867**
Rock-inhabiting microorganisms from hot and cold deserts: Adaptations to extreme environments

Period	*Obligations*	
03/15/77-03/14/79	FY78: $69,965	TOTAL: $124,965
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Friedmann, E. I. Friedmann, R. O.	HQ-SB/Young, R. S.	51-Biology

NAS 8-32835 **Florida Technological University** **1868**
Boundary integral fracture mechanics code

Period	*Obligations*	
02/27/78-12/31/78	FY78: $9,515	TOTAL: $9,515
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Carroll, W. E.	MSFC/Bianca, C. MSFC/Frederick, P. W.	47-Materials Engr

NAS 8-33071 **Florida Technological University** **1869**
Study of cloud cover modeling

Period	*Obligations*	
05/30/78-05/29/79	FY78: $20,000	TOTAL: $20,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Somerville, P. N.	MSFC/Smith, O. E. MSFC/Brown, S. C.	31-Atmos Sci

NAS10-8986 **Florida Technological University** **1870**
Base-line studies for environmentally monitoring for effects of space transportation systems

Period	*Obligations*	
05/28/76-08/14/79	FY78: $268,000	TOTAL: $787,578
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Vickers, D. H. Stout, I. J. Madsen, B. C.	KSC/Buchanan, P. KSC/Williams, P. H.	39-Env Sci, NEC

NAS10-9455 **Florida Technological University** **1871**
Fiber optics pulse dispersion study

Period	*Obligations*	
07/24/78-07/23/79	FY78: $19,977	TOTAL: $19,977
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Riad, S. M. Riad, A. Dimitriadis, B.	KSC/Springer, D. A. KSC/Padgett, M. E.	49-Engr, NEC

NSG 4016 **Florida Technological University** **1872**
Modified maximum likelihood estimation techniques applied to pilot modeling

Period	*Obligations*	
03/10/78-07/10/78	FY78: $7,066	TOTAL: $7,066
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rapson, R. C.	DFRC/Berry, D. T.	41-Aero Engr

NSG 5110 **Florida Technological University** **1873**
Analysis of radio observations of cometary nebulae

Period	*Obligations*	
05/01/76-06/30/77	FY78:	TOTAL: $6,814
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Katzin, J. C.	GSFC/Hobbs, R. W.	11-Astronomy

NASW 3060 **State University System of Florida** **1874**
Operation of a state technology application center

Period	*Obligations*	
01/01/77-12/31/77	FY78: $131,000	TOTAL: $225,980
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Unavailable	HQ-ET/Dolby, W.	99-Multi-Discip

NAS 2-9976 **University of Florida** **1875**
Experiment implementation of a lightning and radio emission detector

Period	*Obligations*	
05/31/78-03/31/82	FY78: $25,000	TOTAL: $25,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lanzerotti, L. J. Uman, M. A. Krider, E. P.	ARC/Wilhelmi, A. J. ARC/Tischler, E. T.	31-Atmos Sci

NAS 5-22908 **University of Florida** **1876**
Nimbus-G experiment team for solar back-scattered ultraviolet and total ozone mapping system

Period	*Obligations*	
12/19/75-10/01/80	FY78: $129,984	TOTAL: $207,984
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Green, A. E.	GSFC/Heath, D. F. GSFC/Nelsen, E. D.	49-Engr, NEC

NAS 8-20247 **University of Florida** **1877**
Study of age deterioration of gasket materials installed in simulated launch vehicle hardware

Period	*Obligations*	
06/28/65-06/30/79	FY78:	TOTAL: $43,055
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Patterson, E. P.	MSFC/Schell, J. T. MSFC/Wood, T. E.	12-Chemistry

NAS 9-15114 **University of Florida** **1878**
Influence of clouds on UV-B penetration of the earth's surface

Period	*Obligations*	
09/01/76-01/31/79	FY78:	TOTAL: $50,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Green, A. E.	JSC/Nachtwey, D. S.	51-Biology

NAS 9-15529 **University of Florida** **1879**
Quantitative determination of un-induced deoxyribonucleic acid damage and repair in higher plants

Period	*Obligations*	
03/15/78-03/31/79	FY78: $40,000	TOTAL: $40,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Howland, G. P.	JSC/Nachtwey, D. S.	51-Biology

NAS10-8920 **University of Florida** **1880**
Models to predict earth-air interface temperature regimes during freeze conditions

Period	*Obligations*	
12/02/75-02/14/79	FY78: $59,993	TOTAL: $202,991
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sutherland, R.	KSC/Pope, C. D.	39-Env Sci, NEC

NAS10-9168 **University of Florida** **1881**
Satellite freeze forecast system

Period	*Obligations*	
05/10/77-11/16/79	FY78: $101,496	TOTAL: $199,230
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bartholic, J. F.	KSC/Pope, C. D.	39-Env Sci, NEC

NAS10-9348 **University of Florida** **1882**
Florida water resources management system using remote sensing and automatic data processing

Period	*Obligations*	
03/03/78-03/02/79	FY78: $99,013	TOTAL: $99,013
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bartholic, J. F.	KSC/Davis, T. C., Jr.	39-Env Sci, NEC

NAS10-9378 **University of Florida** **1883**
Study of processing analysis of lidar and data for accessing launch/landing hazard due to thunderstorms

Period	*Obligations*	
04/17/78-04/16/79	FY78: $24,000	TOTAL: $24,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Childers, D. G.	KSC/Jafferis, W.	45-Elec Engr
Uman, M. A.		

NAS10-9471 **University of Florida** **1884**
Color infrared applications to citriculture

Period	*Obligations*	
09/07/78-03/07/79	FY78: $5,500	TOTAL: $5,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Blasquez, C. H.	KSC/Horne, F. W., Jr.	39-Env Sci, NEC
	KSC/Barnett, U. R.	

NGL 10-005-008 **University of Florida** **1885**
Theoretical atmospheric physics

Period	*Obligations*	
06/04/64-04/30/80	FY78: $54,000	TOTAL: $666,460
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Green, A. S.	HQ-SL/Donn, B. D.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	

NGL 10-005-089 **University of Florida** **1886**
Experimental investigation of a uranium plasma

Period	*Obligations*	
01/30/68-12/31/78	FY78:	TOTAL: $778,795
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Schneider, R. T.	HQ-RR/Thom, K.	13-Physics

NGL 10-005-127 **University of Florida** **1887**
Experimental investigation of round turbulent jet exhausting into a subsonic cross flow

Period	*Obligations*	
12/03/69-10/31/78	FY78: $4,151	TOTAL: $209,333
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fearn, R. L.	LARC/Margason, R. J.	41-Aero Engr

NGR 10-005-057 **University of Florida** **1888**
Studies of electroencephalographic patterns

Period	*Obligations*	
05/23/68-09/01/78	FY78: $10,150	TOTAL: $564,620
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Webb, W. B.	ARC/Patton, R. M.	69-Psych, NEC

NGR 10-005-169 **University of Florida** **1889**
Lightning studies

Period	*Obligations*	
01/15/73-04/13/79	FY78: $14,000	TOTAL: $69,197
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Uman, M. A.	KSC/Jafferis, W.	31-Atmos Sci

NGR 10-005-182 **University of Florida** **1890**
Fundamental studies on electrolyte matrix processing

Period	*Obligations*	
06/26/73-06/30/79	FY78:	TOTAL: $102,667
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Walker, R. D., Jr.	LERC/Sheibley, D. W.	43-Chem Engr

NSG 1425 **University of Florida** **1891**
Study of the electronic properties in the electron and proton irradiated GaAlAs solar cell material

Period	*Obligations*	
09/01/77-08/31/79	FY78: $45,000	TOTAL: $80,400
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Li, S. S.	LARC/Walker, G. H.	45-Elec Engr
	LARC/Conway, E. J.	

NSG 1497 **University of Florida** **1892**
Perturbations in tropospheric OH due to anthropogenic emissions of Co and NoX

Period	*Obligations*	
01/23/78-01/22/79	FY78: $35,000	TOTAL: $35,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Chameides, W. L.	LARC/Reichle, H. G., Jr.	31-Atmos Sci

NSG 1542 **University of Florida** **1893**
Spanwise drag distribution for swept wings

Period	*Obligations*	
07/01/78-08/31/78	FY78: $5,158	TOTAL: $5,158
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fearn, R. L.	LARC/Morgan, H. L., Jr.	41-Aero Engr
	LARC/Margason, R. J.	

NSG 2120 **University of Florida** **1894**
Investigation on the flow about general fuselage shapes at high angles of attack

Period	*Obligations*	
09/15/75-10/30/79	FY78: $32,611	TOTAL: $133,417
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Clarkson, M. H.	ARC/Malcolm, G. N.	41-Aero Engr
	ARC/Chapman, G. T.	

NSG 2288 **University of Florida** **1895**
A jet in a crossflow

Period	*Obligations*	
01/01/78-12/31/78	FY78: $25,000	TOTAL: $25,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fearn, R. L.	ARC/Koenig, D. G. ARC/Falarski, M. D.	41-Aero Engr

NSG 3018 **University of Florida** **1896**
Silicon PN junction solar cells

Period	*Obligations*	
06/24/74-10/14/79	FY78: $45,000	TOTAL: $266,983
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lindholm, F. A. Neugroschel, A.	LERC/Godlewski, M. P. LERC/Brandhorst, H. W., Jr.	45-Elec Engr

NSG 3120 **University of Florida** **1897**
Synthesis of thermally stable polymers from triazolinedione intermediates

Period	*Obligations*	
09/01/76-11/30/77	FY78:	TOTAL: $43,199
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Butler, G. B.	LERC/Alston, W. B.	12-Chemistry

NSG 5116 **University of Florida** **1898**
Investigation of the doubling of the MgII 2759 resonance line

Period	*Obligations*	
06/01/76-05/31/77	FY78:	TOTAL: $3,565
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Chen, K. W.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 7143 **University of Florida** **1899**
Analysis of Jupiter data from radio astronomy experiment spacecraft

Period	*Obligations*	
06/01/75-02/28/78	FY78:	TOTAL: $46,079
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Carr, T. D.	HQ-SC/Roman, N. G. HQ-SC/Rosendhal, J. D.	11-Astronomy

NSG 7236 **University of Florida** **1900**
Use of remote sensing in solving Florida's geological and coastal engineering problems

Period	*Obligations*	
07/01/76-06/30/81	FY78:	TOTAL: $300,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ruth, B. E.	HQ-ET/Vitale, J. A.	39-Env Sci, NEC

NSG 7299 **University of Florida** **1901**
Basic research relevant to a CW-nuclear pumped laser

Period	*Obligations*	
01/01/77-12/31/78	FY78: $98,833	TOTAL: $187,833
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Schneider, R. T.	HQ-RR/Thom, K. LARC/Hohl, F.	13-Physics

NAS 5-22963 **University of Miami** **1902**
Nimbus G coastal zone color scanner sensor experiment

Period	*Obligations*	
02/02/76-02/02/79	FY78: $39,996	TOTAL: $81,996
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gordon, H. R.	GSFC/Nelsen, E. D.	31-Atmos Sci

NAS 8-32898 **University of Miami** **1903**
Numerical study of baroclinic instability

Period	*Obligations*	
06/02/78-01/01/79	FY78: $15,983	TOTAL: $15,983
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Geisler, J. E.	MSFC/Fowlis, W. W. MSFC/Fichtl, G. H.	31-Atmos Sci

NAS 9-15473 **University of Miami** **1904**
Study of sodium homeostasis and renin-aldosterone during water immersion

Period	*Obligations*	
11/21/77-10/31/78	FY78: $25,000	TOTAL: $25,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Epstein, M.	JSC/Leach, C. S.	51-Biology

NAS10-8926 **University of Miami** **1905**
Remote sensing for detection and prediction of thermal pollution

Period	*Obligations*	
01/06/76-07/04/78	FY78:	TOTAL: $184,993
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lee, S. S. Sengupta, S.	KSC/Bland, R. A.	39-Env Sci, NEC

NAS10-8954 **University of Miami** **1906**
Development and application of a laser system as a remote sensor to measure subsurface temperature and turbidity

Period	*Obligations*	
03/22/76-09/22/77	FY78:	TOTAL: $46,730
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hirschberg, J. G. Wouters, A. W.	KSC/Bland, R. A.	39-Env Sci, NEC

NAS10-9005 **University of Miami** **1907**
Application of rigid lid three-dimensional math model to Lake Belews, North Carolina

Period	*Obligations*	
07/02/76-11/15/77	FY78:	TOTAL: $54,958
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lee, S. S. Sengupta, S.	KSC/Bland, R. A.	39-Env Sci, NEC

NAS10-9410 **University of Miami** **1908**
Three dimensional thermal pollution mathematical model

Period	*Obligations*	
06/06/78-06/05/79	FY78: $94,951	TOTAL: $94,951
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lee, S. S. Sengupta, S.	KSC/Bland, R. A. KSC/Barnett, U. R.	46-Mech Engr

NCA 2-438801 **University of Miami** **1909**
Influence of weightlessness on biochemical aging of flight muscle in drosophila melanogaster

Period	*Obligations*	
03/01/78-02/28/79	FY78: $13,500	TOTAL: $13,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rockstein, M.	ARC/Miquel, J.	51-Biology

NGR 10-007-008 **University of Miami** **1910**
Research in the Institute of Molecular Evolution in the School of Environmental and Planetary Sciences

Period	*Obligations*	
06/09/64-09/30/78	FY78: $65,000	TOTAL: $2,457,040
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fox, S. W.	HQ-SB/Young, R. S.	12-Chemistry

NGR 10-007-118 **University of Miami** **1911**
Comparison of stress corrosion cracking behavior of high strength alloys in natural sea water and synthetic sea salt solutions

Period	*Obligations*	
11/26/73-12/31/77	FY78:	TOTAL: $103,550
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Craig, H. L., Jr.	LERC/Shannon, J. L., Jr.	47-Materials Engr
	LERC/Brown, W. F., Jr.	

NSG 1283 **University of Miami** **1912**
Effects of environmental variables on the crack initiation stages of the corrosion fatigue of high strength aluminum alloys

Period	*Obligations*	
03/01/76-03/31/79	FY78: $31,779	TOTAL: $91,179
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Craig, H. L., Jr.	LARC/Lisagor, W. B.	47-Materials Engr
Poteat, L. E.	LARC/Ransone, P. O.	

NSG 1436 **University of Miami** **1913**
Development of Boolean calculus and its application

Period	*Obligations*	
08/15/77-08/14/79	FY78: $21,000	TOTAL: $37,098
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Tapia, M. A.	LARC/Tucker, J. H.	21-Mathematics

NSG 7245 **University of Miami** **1914**
Excess helium in meteorites

Period	*Obligations*	
06/01/76-08/31/77	FY78:	TOTAL: $22,080
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fisher, D. E.	HQ-SL/French, B. M.	32-Geological Sci

NSG 7309 **University of Miami** **1915**
Cosmogenic production rates in chondritic meteorites

Period	*Obligations*	
02/01/77-07/31/78	FY78:	TOTAL: $34,190
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fisher, D. E.	HQ-SL/French, B. M.	32-Geological Sci
	HQ-SL/Quaide, W. L.	

NAS 8-31172 **University of South Florida** **1916**
Investigation of electrical properties of conductive adhesives and film resistors

Period	*Obligations*	
02/07/75-07/26/77	FY78:	TOTAL: $39,837
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sergent, J.	MSFC/Caruso, S. V.	45-Elec Engr
	MSFC/Dehaye, R. F.	

NSG 1159 **University of South Florida** **1917**
Non-Gaussian classification procedures of pattern recognition

Period	*Obligations*	
06/01/75-09/30/77	FY78:	TOTAL: $28,631
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Tsokos, C. P.	LARC/Park, S. K.	21-Mathematics

NSG 1420 **University of South Florida** **1918**
A numerical study of resonance effects on tidal evolution of satellite orbits

Period	*Obligations*	
06/15/77-09/14/78	FY78:	TOTAL: $11,299
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Smith, H. C.	LARC/Tolson, R. H.	11-Astronomy

NSG 1487 **University of South Florida** **1919**
Multispectral sensors and the discrimination of sources

Period	*Obligations*	
01/16/78-01/15/79	FY78: $22,000	TOTAL: $22,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Tsokos, C. P.	LARC/Park, S. K.	21-Mathematics
Turner, J. C.		

NSG 3096 **University of South Florida** **1920**
Computerized power supply analysis: State equation generation and terminal models

Period	*Obligations*	
02/02/76-04/02/78	FY78:	TOTAL: $49,342
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Garrett, S. J.	LERC/Triner, J. E.	45-Elec Engr
Bowers, J. C.	LERC/Kolecki, J. C.	

NSG 7242 **University of South Florida** **1921**
Analysis of satellite observations of beta Lyrae and other objects

Period	*Obligations*	
06/15/76-06/30/78	FY78:	TOTAL: $24,640
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wilkins, R. D.	LARC/Hall, J. B., Jr.	11-Astronomy
Zimmer, R. P.	LARC/Sullivan, E. M.	

NAS 9-15417 **University of West Florida** **1922**
Advanced dosimetry concepts

Period	*Obligations*	
10/01/77-04/01/79	FY78: $20,000	TOTAL: $20,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Schaefer, H. J.	JSC/Barnes, C. M.	59-Life Sci, NEC

GEORGIA

NSG 8019 **Atlanta University** **1923**
A study of the redox photo-chemistry of a number of iron complexes

Period	*Obligations*	
09/01/74-05/31/79	FY78: $24,696	TOTAL: $99,679
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Reed, J. L.	MSFC/Kent, M. I.	12-Chemistry
Johnson, J.		

NSG 2143 **Clark College** **1924**
Aerosol formation and the space shuttle program

Period	*Obligations*	
04/15/76-12/31/78	FY78: $30,000	TOTAL: $70,215
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Walker, G. H.	ARC/Whitten, R. C.	31-Atmos Sci
Veluri, V. R.	ARC/Reynolds, R. T.	

NSG 7267 **Clark College** **1925**
Study of impurity states in quasi one-dimensional systems

Period	*Obligations*	
12/01/76-08/31/78	FY78: $11,392	TOTAL: $23,224
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sinha, O. P.	HQ-LU/Pohly, J. G.	13-Physics
	JPL/Somoano, R.	

NGL 11-001-009 **Emory University** **1926**
Study of cardiovascular adaptation during long-term weightlessness

Period	*Obligations*	
05/12/65-06/30/81	FY78: $35,019	TOTAL: $592,198
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Popovic, V. P.	ARC/Holton, E. M.	51-Biology

NGR 11-001-016 **Emory University** **1927**
Histopathological & histochemical study of subhuman primates

Period	*Obligations*	
10/01/63-02/28/79	FY78: $89,100	TOTAL: $945,748
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bourne, G. H.	ARC/Sandler, H.	51-Biology

NGR 11-001-045 **Emory University** **1928**
Vestibular influence on sleep in non-human primates

Period	*Obligations*	
10/07/71-12/31/78	FY78: $70,205	TOTAL: $440,383
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Perachio, A. A.	ARC/Daunton, N. G.	59-Life Sci, NEC

DEN 3 73 **Georgia Institute of Technology** **1929**
Flat plate photovoltaic system costs study

Period	*Obligations*	
09/21/78-02/07/79	FY78: $34,122	TOTAL: $34,122
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Zimmer, R. P.	LERC/Poley, W. A.	45-Elec Engr

NAS 1-14351 **Georgia Institute of Technology** **1930**
Benefit assessment of pollution monitoring satellites

Period	*Obligations*	
02/26/76-06/05/79	FY78: $59,933	TOTAL: $172,339
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Zimmer, R. P.	LARC/Lawrence, G. F.	31-Atmos Sci
Sassone, P.	LARC/Rarer, J. L.	
Haffer, S. C.		

NAS 1-14654 **Georgia Institute of Technology** **1931**
Investigation of the effects of long duration exposure on active optical system components

Period	*Obligations*	
10/14/76-08/13/78	FY78:	TOTAL: $197,823
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Blue, M. D.	LARC/O'Neal, R. L.	45-Elec Engr
Gallagher, J. J.	LARC/Battista, J. D.	
Shackelford, R. G.		

NAS 1-14947 **Georgia Institute of Technology** **1932**
Data systems study for retrieving remote sensing stratospheric pollution monitoring data from satellite, airborne, and surface platforms

Period	*Obligations*	
06/01/77-06/30/78	FY78:	TOTAL: $74,157
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wilkins, R. D.	LARC/Hall, J. B., Jr.	99-Multi-Discip
Zimmer, R. P.	LARC/Sullivan, E. M.	

NAS 1-15158 **Georgia Institute of Technology** **1933**
A study to interpret the surface pressure measurements at the tip of a model helicopter rotor in hover

Period	*Obligations*	
11/01/77-04/15/79	FY78: $29,000	TOTAL: $29,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gray, R. B.	LARC/Young, W. H., Jr.	41-Aero Engr
McMahon, H. M.	LARC/Mantay, W. R.	

NAS 1-15370 **Georgia Institute of Technology** **1934**
Holographic data storage crystals experiment for the Long Duration Exposure Facility (LDEF) phases I and II

Period	*Obligations*	
04/21/78-04/20/79	FY78: $11,000	TOTAL: $11,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gaylord, T. K.	LARC/O'Neal, R. L.	45-Elec Engr
Callen, W. R.	LARC/Clark, L. G.	

NAS 3-20110 **Georgia Institute of Technology** **1935**
Study of millimeter wave satellite concepts

Period	*Obligations*	
06/01/76-03/31/79	FY78: $26,445	TOTAL: $127,148
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Zimmer, R. P.	LERC/Stevens, G. H.	42-Astro Engr

NAS 5-23710 **Georgia Institute of Technology** 1936
Aircraft radiometer system for project Storm Fury

Period	*Obligations*	
09/21/76-09/30/79	FY78: $90,000	TOTAL: $256,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Dees, J. W.	GSFC/King, J. L.	45-Elec Engr

NAS 5-24148 **Georgia Institute of Technology** 1937
Thunderstorm research international project 1977

Period	*Obligations*	
05/04/77-06/05/79	FY78: $4,996	TOTAL: $19,993
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wilson, C. S. Wilson, B. J.	GSFC/Levine, D. M.	31-Atmos Sci

NAS 5-24480 **Georgia Institute of Technology** 1938
Radiometer studies for ultraviolet applications

Period	*Obligations*	
04/06/78-02/05/79	FY78: $69,188	TOTAL: $69,188
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Schuchardt, J. M.	GSFC/King, J. L.	45-Elec Engr

NAS 8-30653 **Georgia Institute of Technology** 1939
USGS/NASA land-use classification system

Period	*Obligations*	
04/02/74-02/28/77	FY78:	TOTAL: $49,980
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Dees, J. W. Faust, N. L. Spann, G. W.	MSFC/Paludan, C. T.	39-Env Sci, NEC

NAS 8-30657 **Georgia Institute of Technology** 1940
Neutral thermodynamic atmospheric model research study

Period	*Obligations*	
04/22/74-01/31/77	FY78:	TOTAL: $81,637
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Justus, C. G.	MSFC/Smith, O. E.	49-Engr, NEC

NAS 8-31193 **Georgia Institute of Technology** 1941
A laser scanner for 35 mm film

Period	*Obligations*	
02/25/75-04/24/77	FY78:	TOTAL: $58,945
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Callen, W. R.	MSFC/Kerr, J. H.	13-Physics

NAS 8-31850 **Georgia Institute of Technology** 1942
Computer processing of peach tree decline data

Period	*Obligations*	
02/13/76-08/31/78	FY78:	TOTAL: $29,987
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Dees, J. W. Faust, N. L.	MSFC/Downs, S. W., Jr. MSFC/Paludan, C. T.	39-Env Sci, NEC

NAS 8-31990 **Georgia Institute of Technology** 1943
Digital analysis of LANDSAT data

Period	*Obligations*	
06/25/76-11/30/77	FY78:	TOTAL: $18,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Faust, C. E.	MSFC/Downs, S. W., Jr. MSFC/Bensko, J.	32-Geological Sci

NAS 8-32397 **Georgia Institute of Technology** 1944
Digitizing of LANDSAT data

Period	*Obligations*	
01/13/77-05/31/78	FY78:	TOTAL: $24,827
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Shackelford, R. G. Faust, N. L.	MSFC/Downs, S. W., Jr. MSFC/Huffman, J. D.	39-Env Sci, NEC

NAS 8-32897 **Georgia Institute of Technology** 1945
Study low latitude winds for orbital reentry

Period	*Obligations*	
06/02/78-06/01/79	FY78: $40,000	TOTAL: $40,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Justus, C. G.	MSFC/Smith, O. E. MSFC/Johnson, D.	31-Atmos Sci

NAS 8-33093 **Georgia Institute of Technology** 1946
Applications of acoustics in the measurement of coal slab thicknesses

Period	*Obligations*	
07/31/78-07/30/79	FY78: $87,636	TOTAL: $87,636
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Pierce, A. D. Mills, J. M. Madden, J., Jr.	MSFC/Reed, B. MSFC/Randall, J.	49-Engr, NEC

NAS10-9097 **Georgia Institute of Technology** 1947
Manatee tracking project: Development of a concept of an automatic tracking system to determine the location and movements of manatees

Period	*Obligations*	
03/11/77-06/10/78	FY78: $5,837	TOTAL: $31,807
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Michelson, R. E.	KSC/Keene, L. F. KSC/Murphy, J. L.	49-Engr, NEC

NAS10-9210 **Georgia Institute of Technology** 1948
Initial phase of study of lightning transients on buried cable

Period	*Obligations*	
07/25/77-09/25/77	FY78:	TOTAL: $6,806
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Woody, J. A.	KSC/Jafferis, W.	31-Atmos Sci

NAS13-84 **Georgia Institute of Technology** **1949**
Transfer of IMGRID software from Cyber 74 system to the Univac 1108 and implement the linear feature selection software

Period	*Obligations*	
04/06/78-04/05/79	FY78: $20,000	TOTAL: $20,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Faust, N. L.	NSTL/Pearson, R.	22-Computer Science

NGL 11-002-004 **Georgia Institute of Technology** **1950**
Theoretical and experimental research program in geophysics with emphasis on upper atmosphere chemical release studies

Period	*Obligations*	
09/27/62-05/31/80	FY78:	TOTAL: $815,075
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Edwards, H. D.	HQ-SL/Fellows, R. F.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	

NSG 1288 **Georgia Institute of Technology** **1951**
Analysis of the gas core actinite transmutation reactor

Period	*Obligations*	
03/01/76-02/28/79	FY78: $25,716	TOTAL: $137,396
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Clement, J. D.	LARC/Hohl, F.	19-Phys Sci, NEC
Rust, J. H.		

NSG 1351 **Georgia Institute of Technology** **1952**
Elastic-plastic finite element analyses of fatigue crack growth in mode I and mode II conditions

Period	*Obligations*	
01/01/77-09/30/78	FY78:	TOTAL: $29,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Atluri, S. N.	LARC/Newman, J. C., Jr.	49-Engr, NEC
	LARC/Leybold, H. A.	

NSG 1352 **Georgia Institute of Technology** **1953**
Comparative evaluation of woven-graphite-epoxy composites

Period	*Obligations*	
02/01/77-10/31/78	FY78:	TOTAL: $19,994
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hanagud, S. V.	LARC/Poe, C. C., Jr.	47-Materials Engr
Tayebi, A.		

NSG 1493 **Georgia Institute of Technology** **1954**
Science support for solar occultation experiments with the Nimbus-G/Sam II and AEM-B/Sage spacecraft sensors

Period	*Obligations*	
01/16/78-10/15/78	FY78: $56,992	TOTAL: $56,992
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Grams, G. W.	LARC/McMaster, L. R.	31-Atmos Sci
	LARC/McCormick, M. P.	

NSG 2306 **Georgia Institute of Technology** **1955**
Light-scattering calculations for the nephelometer experiment on the 1981/1982 Jupiter orbiter-probe mission

Period	*Obligations*	
03/01/78-02/28/79	FY78: $16,863	TOTAL: $16,863
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Grams, G. W.	ARC/Ragent, B.	31-Atmos Sci
	ARC/Privette, C. A.	

NSG 2323 **Georgia Institute of Technology** **1956**
Technology integration analyses for closed life support systems applicable to space habitats

Period	*Obligations*	
06/01/78-03/31/79	FY78: $65,000	TOTAL: $65,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Carden, J. L.	ARC/Quattrone, P. D.	59-Life Sci, NEC
Mason, R. M.		

NSG 3015 **Georgia Institute of Technology** **1957**
Combustion and entropy noise in turbopropulsion systems

Period	*Obligations*	
07/15/74-07/14/77	FY78:	TOTAL: $122,465
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Strahle, W. C.	LERC/Huff, R. G.	13-Physics

NSG 3036 **Georgia Institute of Technology** **1958**
Acoustic properties of turbofan inlets

Period	*Obligations*	
09/01/74-10/31/78	FY78:	TOTAL: $68,354
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Zinn, B. T.	LERC/Baumeister, K. J.	41-Aero Engr
Sigman, R. K.	LERC/Rice, E. J.	

NSG 3052 **Georgia Institute of Technology** **1959**
Experimental determination of rocket injector response factors under reactive conditions

Period	*Obligations*	
03/01/75-02/28/79	FY78: $54,671	TOTAL: $212,558
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Korkan, K. D.	LERC/Priem, R. J.	42-Astro Engr
Petrie, S. L.		

NSG 3106 **Georgia Institute of Technology** **1960**
Surface temperatures and glassy state investigations in tribology

Period	*Obligations*	
05/15/76-06/30/79	FY78: $30,024	TOTAL: $80,029
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Winer, W. O.	LERC/Jones, W. R., Jr.	46-Mech Engr
Bair, S.		

NSG 3228 **Georgia Institute of Technology** **1961**
A study of poultry plant noise characteristics and potential noise control techniques

Period	*Obligations*	
10/01/78-09/30/79	FY78: $50,000	TOTAL: $50,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cassonova, R. A.	LERC/Feiler, C. E.	13-Physics

NSG 5012 **Georgia Institute of Technology** **1962**
Research in millimeter wave techniques

Period	*Obligations*	
06/15/74-01/31/79	FY78: $110,001	TOTAL: $551,434
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
McMillan, R. W.	GSFC/King, J. L.	45-Elec Engr
	GSFC/Shiue, J. C.	

NSG 5082 **Georgia Institute of Technology** **1963**
Permittivity of sea water at millimeter wavelengths

Period	*Obligations*	
10/01/75-05/15/78	FY78:	TOTAL: $61,971
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Dees, J. W.	GSFC/King, J. L.	31-Atmos Sci

NSG 5220 **Georgia Institute of Technology** **1964**
Meteorological measurements by synthetic radar

Period	*Obligations*	
02/01/78-01/31/79	FY78: $50,328	TOTAL: $50,328
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Metcalf, J. I.	GSFC/Atlas, D.	31-Atmos Sci
Trebits, R. N.		
Piper, S. O.		

NSG 7069 **Georgia Institute of Technology** **1965**
Photocatalytic synthesis on planetary surfaces; molecular bases for the adaptation of halophilic microorganisms

Period	*Obligations*	
09/15/74-09/30/78	FY78:	TOTAL: $54,448
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Hubbard, J. S.	HQ-SB/Young, R. S.	51-Biology

NAS 5-23571 **Morehouse College** **1966**
Application of medical information management system for medical record keeping

Period	*Obligations*	
06/09/76-06/08/79	FY78: $39,865	TOTAL: $72,865
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Margolis, S.	GSFC/Alterescu, S.	52-Clinical Med
Norris, T. E.	GSFC/Friedman, D. S.	
Sullivan, L. W.		

NGL 11-008-001 **Morehouse College** **1967**
A research program in atmospheric and astro chemistry

Period	*Obligations*	
05/22/72-04/01/78	FY78:	TOTAL: $119,444
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Gales, J. N.	MSFC/Stephens, J. B.	12-Chemistry
Merideth, C. W.	MSFC/Kent, M. I.	

NGT 11-008-004 **Morehouse College** **1968**
Training of undergraduate students in sciences and engineering

Period	*Obligations*	
06/01/74-05/31/79	FY78: $3,500	TOTAL: $31,500
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Hall, J.	HQ-LU/Pohly, J. G.	99-Multi-Discip
	HQ-U/Jenkins, H. G.	

NSG 7269 **Morehouse College** **1969**
Atmospheric chemistry-mechanisms and kinetics of the reactions of ozone and stratospheric pollutants

Period	*Obligations*	
10/01/76-03/31/78	FY78:	TOTAL: $40,000
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Hall, J.	HQ-LU/Pohly, J. G.	31-Atmos Sci

NSG 8020 **Morehouse College** **1970**
A study for a heavy atom tracer method for the measurement of turbulence in plasmas

Period	*Obligations*	
08/01/74-08/31/76	FY78:	TOTAL: $61,222
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Turner, J. M.	MSFC/Stone, N. H.	13-Physics
	MSFC/Kent, M. I.	

NSG 8030 **Morehouse College** **1971**
Theoretical isotope effects to determine molecular structures: Thermodynamics comparisons inside and outside earth's atmosphere

Period	*Obligations*	
10/15/75-10/14/76	FY78:	TOTAL: $38,948
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Frazier, D. O.	MSFC/Clemons, J. M.	12-Chemistry
	MSFC/Kent, M. I.	

NSG 8039 **Morehouse College** **1972**
Analysis of pulsed magnetogasdynamic direct energy converter configurations

Period	*Obligations*	
06/01/76-06/02/78	FY78:	TOTAL: $22,179
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Spight, C.	MSFC/Vaughn, W. W.	13-Physics
	MSFC/Kent, M. I.	

NSG 8043 **Morehouse College** **1973**
A comprehensive examination of ion acoustic waves in multi-ion component plasmas

Period	*Obligations*	
09/15/76-09/14/79	FY78:	TOTAL: $22,786
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Turner, J. M.	MSFC/Burch, J. L.	13-Physics

NSG 8049 **Morehouse College** **1974**
Matrix-isolation-infrared and Raman studies of short-range intermolecular interactions

Period	*Obligations*	
03/08/77-03/07/78	FY78:	TOTAL: $47,684
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Hall, J. H., Jr.	MSFC/Clemons, J. M.	12-Chemistry
	MSFC/Kent, M. I.	

GEORGIA (Continued)

NSG 8027 **Morris Brown College** **1975**
Increasing adhesion of paracyclophane polymers to epoxy glass laminate surfaces

Period 06/01/75-01/31/78 *Obligations* FY78: TOTAL: $35,472
Prin. Invest. Maxwell, A.
NASA Tech. Officer MSFC/Patterson, W. J.; MSFC/Kent, M. I.
CASE Category 12-Chemistry

NAS 8-30619 **North Georgia College** **1976**
Correlation studies of remote sensing and fine beetle infestation

Period 04/09/74-06/30/78 *Obligations* FY78: TOTAL: $19,788
Prin. Invest. Biesbrock, J. A.
NASA Tech. Officer MSFC/Downs, S. W., Jr.; MSFC/Paludan, C. T.
CASE Category 51-Biology

NSG 803 **Savannah State College** **1977**
Toxic elements and organic degradation products in aquatic bodies and sediments around KSC

Period 09/23/74-03/22/79 *Obligations* FY78: $27,000 TOTAL: $110,289
Prin. Invest. Ghuman, G. S.; Menon, M. P.; Emeh, C. O.
NASA Tech. Officer KSC/Perkins, E. E.
CASE Category 39-Env Sci, NEC

NSG 8048 **Savannah State College** **1978**
Research study of edge enhancement of multispectral imagery

Period 02/15/77-08/31/78 *Obligations* FY78: $8,418 TOTAL: $27,987
Prin. Invest. Wenner, D. B.
NASA Tech. Officer MSFC/Jayroe, R. R., Jr.; MSFC/Kent, M. I.
CASE Category 45-Elec Engr

NGT 11-013-001 **Spelman College** **1979**
Training of undergraduate students in sciences and engineering

Period 06/01/74-05/31/78 *Obligations* FY78: $3,500 TOTAL: $31,500
Prin. Invest. Falconer, E.
NASA Tech. Officer HQ-LU/Pohly, J. G.; HQ-U/Jenkins, H. G.
CASE Category 99-Multi-Discip

NASW 2948 **University of Georgia** **1980**
Operation of the computer software management information center

Period 07/01/76-12/31/78 *Obligations* FY78: $68,386 TOTAL: $287,183
Prin. Invest. Unavailable
NASA Tech. Officer HQ-ET/Harrison, J. O.
CASE Category 99-Multi-Discip

NGR 11-003-037 **University of Georgia** **1981**
Interpretation of stratigraphy and geologic mapping of Mars from Mariner/Mars 1971 television pictures

Period 05/24/72-04/14/79 *Obligations* FY78: TOTAL: $79,800
Prin. Invest. Howard, J. H.
NASA Tech. Officer HQ-SL/Boyce, J. M.
CASE Category 32-Geological Sci

NSG 7433 **University of Georgia** **1982**
Irradiation effects on the surface of the Moon, Mercury, asteroids, and other airless solar system bodies due to solar high energy particles and cosmic rays

Period 03/01/78-05/30/79 *Obligations* FY78: $16,021 TOTAL: $16,021
Prin. Invest. Wenner, D. B.
NASA Tech. Officer HQ-SL/Dwornik, S. E.; HQ-SL/Boyce, J. M.
CASE Category 32-Geological Sci

HAWAII

NAS 5-25181 **University of Hawaii** **1983**
Modifications to and operations and maintenance of the Lunar Laser Observatory at the University of Hawaii in support of various satellite missions

Period 08/09/78-09/30/79 *Obligations* FY78: $100,000 TOTAL: $100,000
Prin. Invest. Cushman, S. F.; Jeffries, J. T.
NASA Tech. Officer GSFC/White, W. W.; GSFC/Davis, J. B.
CASE Category 11-Astronomy

NASW 2801 **University of Hawaii** **1984**
Construction of the three meter infrared telescope facility at Mauna Kea, Hawaii

Period 06/01/75-07/01/79 *Obligations* FY78: $720,000 TOTAL: $7,678,200
Prin. Invest. Jefferies, J. T.
NASA Tech. Officer HQ-BX/Weir, J. F.; HQ-SL/Brunk, W. E.
CASE Category 11-Astronomy

NASW 3159 **University of Hawaii** **1985**
Provision of support during the preparatory stage for operation of the NASA infrared telescope facility

Period 01/01/78-12/31/78 *Obligations* FY78: $91,292 TOTAL: $91,292
Prin. Invest. Jefferies, J. T.
NASA Tech. Officer HQ-SL/Brunk, W. E.; HQ-SL/Quaide, W. L.
CASE Category 11-Astronomy

NCA 2-285801 **University of Hawaii** **1986**
Design of an advanced packet broadcasting satellite sensor system

Period 06/01/78-01/31/79 *Obligations* FY78: $20,000 TOTAL: $20,000
Prin. Invest. Abramson, N.
NASA Tech. Officer ARC/Nishioka, K.
CASE Category 99-Multi-Discip

NGL 12-001-011 **University of Hawaii** **1987**
Research in coronal and chromospheric physics

Period 11/16/64-09/30/78 *Obligations* FY78: $220,000 TOTAL: $3,859,234
Prin. Invest. Jefferies, J. T.
NASA Tech. Officer HQ-ST/Bohlin, J. D.
CASE Category 11-Astronomy

NGL 12-001-042 **University of Hawaii** **1988**
Performance and capabilities of terrestrial organisms in extreme and unusually gaseous and liquid environments

Period	*Obligations*	
04/14/67-12/31/77	FY78:	TOTAL: $451,378
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Siegel, S. M.	HQ-SB/Young, R. S.	51-Biology

NGL 12-001-057 **University of Hawaii** **1989**
Research in planetary studies

Period	*Obligations*	
05/21/68-06/30/80	FY78:	TOTAL: $3,561,472
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Jefferies, J. T.	HQ-SL/Brunk, W. E. HQ-SL/Fellows, R. F.	11-Astronomy

NGR 12-001-075 **University of Hawaii** **1990**
Research in solar ultraviolet spectroscopy

Period	*Obligations*	
12/09/69-12/31/78	FY78: $100,000	TOTAL: $1,950,421
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Jefferies, J. T.	GSFC/Bissell, E. E. HQ-ST/Bohlin, J. D.	11-Astronomy

NGR 12-001-109 **University of Hawaii** **1991**
N-heterocyclic compounds role in chemical evolution distribution in meteorites ancient sediments and as products of spark discharge reactions

Period	*Obligations*	
06/26/72-05/14/79	FY78: $36,000	TOTAL: $226,775
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Folsome, C. E.	HQ-SB/Young, R. S.	12-Chemistry

NGR 12-001-127 **University of Hawaii** **1992**
Operation of the Haleakala Lunar Ranging Observatory

Period	*Obligations*	
06/01/73-06/31/79	FY78: $325,000	TOTAL: $1,587,200
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Jefferies, J. T.	HQ-SL/Finley, C. J.	32-Geological Sci
Cushman, S. F.	HQ-ER/Flinn, E. A.	

NSG 3132 **University of Hawaii** **1993**
Digital simulation of dynamic stability and random paralleling of ERDA-NASA wind turbine generators with small power systems

Period	*Obligations*	
11/01/76-12/31/77	FY78:	TOTAL: $39,161
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hwang, H. H.	LERC/Gilbert, L. J.	45-Elec Engr

NSG 5096 **University of Hawaii** **1994**
Abundance of boron in normal b and a type stars

Period	*Obligations*	
02/01/76-12/31/77	FY78:	TOTAL: $22,080
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Boesgaard, A. M.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5159 **University of Hawaii** **1995**
Determination of highly reflective cloud frequencies over the tropical oceans

Period	*Obligations*	
02/14/77-01/15/79	FY78: $5,000	TOTAL: $17,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ramage, C. S.	GSFC/Theon, J. S.	31-Atmos Sci

NSG 5203 **University of Hawaii** **1996**
Geochemical data synthesis and analyses

Period	*Obligations*	
12/01/77-01/31/79	FY78: $30,700	TOTAL: $30,700
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Philpotts, J. A.	GSFC/Nava, D. F.	32-Geological Sci

NSG 5231 **University of Hawaii** **1997**
Determination of cosmic abundance of boron

Period	*Obligations*	
02/19/78-02/18/79	FY78: $5,457	TOTAL: $5,457
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Boesgaard, A. M.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 7179 **University of Hawaii** **1998**
Crustal deformation observations

Period	*Obligations*	
10/20/75-12/31/77	FY78:	TOTAL: $345,865
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Berg, E.	HQ-SL/Shirey, W. H.	19-Phys Sci, NEC
Sutton, G. H.		

NSG 7310 **University of Hawaii** **1999**
Spectroscopy of asteroids

Period	*Obligations*	
01/01/77-01/31/79	FY78: $32,586	TOTAL: $62,786
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McCord, T. B.	HQ-SL/Brunk, W. E. HQ-SL/Quaide, W. L.	11-Astronomy

NSG 7312 **University of Hawaii** **2000**
Remote compositional mapping of the lunar surface

Period	*Obligations*	
02/01/77-01/31/79	FY78: $265,162	TOTAL: $561,112
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McCord, T. B.	HQ-SL/Goldstein, B. E. HQ-SL/Quaide, W. L.	32-Geological Sci

NSG 7323 **University of Hawaii** **2001**
Research in planetary astronomy

Period	*Obligations*	
02/01/77-02/28/79	FY78: $69,638	TOTAL: $132,292
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McCord, T. B.	HQ-SL/Brunk, W. E. HQ-SL/Quaide, W. L.	11-Astronomy

HAWAII (Continued)

NSG 7403 — **University of Hawaii** — **2002**
Study of physical processes affecting water ice on outer solar system objects

Period	*Obligations*	
12/01/77-11/30/78	FY78: $19,700	TOTAL: $19,700
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Pilcher, C. B.	HQ-SL/Dwornik, S. E. HQ-SL/Boyce, J. M.	32-Geological Sci

NSG 7423 — **University of Hawaii** — **2003**
Analysis of depth profiles of cosmic ray products in rocks

Period	*Obligations*	
03/01/78-02/28/79	FY78: $9,960	TOTAL: $9,960
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Russ, G. P.	HQ-SL/Quaide, W. L. HQ-SL/French, B. E.	32-Geological Sci

NSG 7443 — **University of Hawaii** — **2004**
Mineralogy of the surfaces of Mercury and Mars

Period	*Obligations*	
02/01/78-01/31/79	FY78: $40,048	TOTAL: $40,048
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McCord, T. B.	HQ-SL/Dwornik, S. E.	32-Geological Sci

NSG 7462 — **University of Hawaii** — **2005**
An investigation of the mineralogy and petrology or meteorite parent bodies utilizing reflectance spectroscopy

Period	*Obligations*	
07/15/78-07/14/79	FY78: $15,000	TOTAL: $15,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gaffey, M. J.	HQ-SL/Quaide, W. L. HQ-SL/French, B. M.	32-Geological Sci

NSG 9071 — **University of Hawaii** — **2006**
Geochemistry of lunar and planetary processes

Period	*Obligations*	
07/15/78-01/31/79	FY78: $28,750	TOTAL: $28,750
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Philpotts, J. A.	JSC/Harris, J. W.	32-Geological Sci

ILLINOIS

NSG 2188 — **Chicago State University** — **2007**
Gold, rhenium and silver partitioning in part of the system basalt-Fe-FeS

Period	*Obligations*	
10/01/76-06/30/78	FY78:	TOTAL: $18,670
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Methot, R. L.	ARC/Bunch, T. E.	32-Geological Sci

NSG 3030 — **Chicago State University** — **2008**
The restoration of obliterated serial numbers by ultrasonically cavitated water

Period	*Obligations*	
07/01/74-08/31/79	FY78: $10,280	TOTAL: $89,725
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Treptow, R. S.	LERC/Young, S. G.	99-Multi-Discip

NSG 1266 — **Illinois Institute of Technology** — **2009**
Automated sizing of aerospace structures under multiple constraints

Period	*Obligations*	
12/01/75-10/31/79	FY78: $72,710	TOTAL: $148,610
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Haftka, R. T.	LARC/Adelman, H. M.	41-Aero Engr

NSG 1451 — **Illinois Institute of Technology** — **2010**
Evaluation of a new concept for reducing free stream turbulence in wind tunnels

Period	*Obligations*	
09/01/77-08/31/78	FY78:	TOTAL: $10,773
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Nagib, H. M.	LARC/Harvey, W. D.	41-Aero Engr

NSG 3141 — **Illinois Institute of Technology** — **2011**
Analysis of turbulent coaxial flow with internal energy generation

Period	*Obligations*	
02/14/77-02/13/78	FY78:	TOTAL: $30,665
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Weinstein, H.	LERC/Braun, W. H.	49-Engr, NEC

NSG 3220 — **Illinois Institute of Technology** — **2012**
Management of turbulence and vorticity in contracting flows with applications to simulations of flight fan noise

Period	*Obligations*	
09/15/78-09/14/79	FY78: $50,300	TOTAL: $50,300
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Nagib, H. M. Wigeland, R. A.	LERC/Groeneweg, J. F.	41-Aero Engr

NAS 3-21261 — **Northwestern University** — **2013**
Measurement of film thickness in face seals

Period	*Obligations*	
07/14/78-10/13/78	FY78: $10,000	TOTAL: $10,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Burton, R. A.	LERC/Ludwig, L. P.	46-Mech Engr

NAS 8-33010 — **Northwestern University** — **2014**
Research in galactic and extragalactic astronomy HEAO-1

Period	*Obligations*	
06/01/78-05/31/79	FY78: $32,583	TOTAL: $32,583
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ulmer, M. P.	MSFC/Dailey, C. C.	11-Astronomy

NGL 14-007-041 Northwestern University 2015
A study of celestial objects of high angular momenta
Period 02/18/66-04/30/78 *Obligations* FY78: TOTAL: $265,251
Prin. Invest. Huang, S. S.
NASA Tech. Officer HQ-SC/Roman, N. G.; HQ-SC/Rosendhal, J. D.
CASE Category 11-Astronomy

NGR 14-007-131 Northwestern University 2016
Study of electronic factors in fracture of metals
Period 07/30/73-06/30/77 *Obligations* FY78: TOTAL: $75,000
Prin. Invest. Waber, J. T.
NASA Tech. Officer LERC/Behrendt, D. R.
CASE Category 13-Physics

NGT 14-007-780 Northwestern University 2017
Pre-cooperative engineering education program
Period 10/01/77-09/30/79 *Obligations* FY78: $14,765 TOTAL: $14,765
Prin. Invest. Ingersoll, D.
NASA Tech. Officer HQ-LU/Pohly, J. G.; LERC/Allen, R. P.
CASE Category 49-Engr, NEC

NSG 2149 Northwestern University 2018
Technological and economic factors affecting the retirement dates of commercial jet aircraft
Period 04/01/76-01/29/79 *Obligations* FY78: $7,700 TOTAL: $45,604
Prin. Invest. Spencer, F. A.
NASA Tech. Officer ARC/Belsley, S. E.; ARC/Jones, J. L.
CASE Category 41-Aero Engr

NSG 2328 Northwestern University 2019
Impact of international noise abatement regulations on the U.S. aircraft manufacturing and air carrier industries
Period 05/15/78-01/31/79 *Obligations* FY78: $22,300 TOTAL: $22,300
Prin. Invest. Spencer, F. A.
NASA Tech. Officer ARC/Belsley, S. E.; ARC/Jones, J. L.
CASE Category 41-Aero Engr

NSG 3039 Northwestern University 2020
Investigation of interaction of turbine blade tips and labyrinth seals with housings of jet engines and gas turbines
Period 09/16/74-12/31/78 *Obligations* FY78: $30,000 TOTAL: $133,497
Prin. Invest. Burton, R. A.
NASA Tech. Officer LERC/Ludwig, L. P.
CASE Category 47-Materials Engr

NSG 3042 Northwestern University 2021
Influence of high traction fluids on elastohydrodynamic traction
Period 01/15/75-12/14/77 *Obligations* FY78: TOTAL: $9,982
Prin. Invest. Cheng, H. S.
NASA Tech. Officer LERC/Zaretsky, E. V.
CASE Category 46-Mech Engr

NSG 3143 Northwestern University 2022
Dynamic load and lubrication of spiral bevel gears
Period 03/15/77-06/14/79 *Obligations* FY78: $35,546 TOTAL: $68,795
Prin. Invest. Cheng, H. S.
NASA Tech. Officer LERC/Coy, J. J.; LERC/Zaretsky, E. V.
CASE Category 46-Mech Engr

NSG 3149 Northwestern University 2023
Effects of debris dents and furrows on elastohydrodynamic lubrication
Period 05/01/77-10/31/78 *Obligations* FY78: TOTAL: $16,775
Prin. Invest. Cheng, H. S.
NASA Tech. Officer LERC/Wedeven, L. D.
CASE Category 46-Mech Engr

NSG 5196 Northwestern University 2024
Observations of the Perseus cluster with the SAS-3 satellite
Period 08/01/77-07/31/78 *Obligations* FY78: TOTAL: $5,000
Prin. Invest. Ulmer, M. P.
NASA Tech. Officer GSFC/Kupperian, J. E., Jr.
CASE Category 11-Astronomy

NGR 14-008-026 Southern Illinois University - Carbondale 2025
Characterization of developmental physiology of previously unstudied life form, obligately, halophilic blue-green algae, aphanothece halothytica
Period 05/08/73-10/01/77 *Obligations* FY78: TOTAL: $143,144
Prin. Invest. Yopp, J. H.
NASA Tech. Officer HQ-SB/Young, R. S.
CASE Category 51-Biology

NSG 2238 Southern Illinois University - Carbondale 2026
Development of an advanced avionics system for general aviation
Period 06/15/77-12/31/78 *Obligations* FY78: TOTAL: $12,968
Prin. Invest. McCalla, T. M.
NASA Tech. Officer ARC/Callas, G. P.; ARC/Denery, D. G.
CASE Category 21-Mathematics

NSG 7394 Southern Illinois University - Carbondale 2027
Blue-green algae studies
Period 12/01/77-02/28/79 *Obligations* FY78: $281,708 TOTAL: $281,708
Prin. Invest. Yopp, J. H.
NASA Tech. Officer HQ-SB/Young, R. S.
CASE Category 51-Biology

NAS 2-6551 University of Chicago 2028
Pioneer F/G charged particle experiment data analysis
Period 08/09/71-09/30/78 *Obligations* FY78: $244,101 TOTAL: $1,424,741
Prin. Invest. Simpson, J. A.
NASA Tech. Officer ARC/Hall, C. F.; ARC/Porter, D. L.
CASE Category 11-Astronomy

NAS 5-11067 **University of Chicago** **2029**
IMP-H&J solar flare and isotope experiment

Period	*Obligations*	
06/11/68-11/30/78	FY78: $193,000	TOTAL: $2,031,304
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Simpson, J. A.	GSFC/Davis, M. A.	13-Physics

NAS 5-20674 **University of Chicago** **2030**
Quasi ray electrons experiment for ISEE-C heliocentric orbit

Period	*Obligations*	
10/24/74-12/31/81	FY78: $119,000	TOTAL: $944,970
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Meyer, P.	GSFC/Gallagher, W. F. GSFC/Davis, M. A.	13-Physics

NAS 5-24430 **University of Chicago** **2031**
Design, develop, fabricate and test a scientific instrument for an experiment to measure cosmic ray isotopes

Period	*Obligations*	
12/01/77-09/30/83	FY78: $800,000	TOTAL: $800,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Simpson, J. A.	GSFC/Davis, M. A.	13-Physics

NAS 8-32828 **University of Chicago** **2032**
Elemental composition and energy spectra of cosmic ray nuclei

Period	*Obligations*	
10/28/77-01/15/82	FY78: $935,785	TOTAL: $935,785
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Meyer, P. Muller, D.	MSFC/Guynes, B. V. MSFC/Ise, R.	31-Atmos Sci

NCA 2-108801 **University of Chicago** **2033**
Dynamics of galaxies by three-dimensional simulations

Period	*Obligations*	
10/15/77-12/01/78	FY78: $6,250	TOTAL: $6,250
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Miller, R. H.	ARC/Smith, B. F.	11-Astronomy

NGL 14-001-001 **University of Chicago** **2034**
Investigation of effects of solar wind in interplanetary space

Period	*Obligations*	
08/01/60-12/31/80	FY78: $70,000	TOTAL: $1,149,372
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Parker, E. N.	HQ-SC/Fishman, G. J. HQ-SC/Opp, A. G.	11-Astronomy

NGL 14-001-005 **University of Chicago** **2035**
High altitude balloon investigations of composition, energy spectrum & intensity of primary cosmic radiation at high & intermediate geomagnetic latitudes

Period	*Obligations*	
05/01/61-10/31/79	FY78: $428,000	TOTAL: $5,505,258
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Meyer, P.	HQ-SC/Opp, A. G.	11-Astronomy

NGL 14-001-006 **University of Chicago** **2036**
Experimental and theoretical studies of energetic particles and electrodynamical processes in interplanetary space and in vicinity of planets

Period	*Obligations*	
08/01/61-12/31/78	FY78: $425,000	TOTAL: $6,012,396
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Simpson, J. A.	HQ-SC/Fishman, G. F. HQ-SC/Opp, A. G.	11-Astronomy

NGL 14-001-010 **University of Chicago** **2037**
Research and investigation of origin, age and composition of meteorites

Period	*Obligations*	
03/11/63-03/31/81	FY78: $125,710	TOTAL: $1,548,513
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Anders, E. Lewis, R. S.	HQ-SL/French, B. M. HQ-SL/Quaide, W. L.	32-Geological Sci

NGL 14-001-167 **University of Chicago** **2038**
Lunar sample analysis

Period	*Obligations*	
03/29/72-01/31/81	FY78: $157,370	TOTAL: $1,496,390
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Anders, E.	JSC/Harris, J. W.	13-Physics

NGL 14-001-169 **University of Chicago** **2039**
Lunar sample analysis

Period	*Obligations*	
01/19/71-01/31/81	FY78: $140,474	TOTAL: $793,292
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cox, E. L.	JSC/Harris, J. W.	12-Chemistry

NGL 14-001-171 **University of Chicago** **2040**
Lunar sample analysis

Period	*Obligations*	
01/19/71-01/31/81	FY78: $103,977	TOTAL: $619,383
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Smith, J. V.	JSC/Harris, J. W.	13-Physics

NGL 14-001-258 **University of Chicago** **2041**
Advanced technical developments in support of scientific experiments in space

Period	*Obligations*	
06/15/73-03/31/79	FY78: $250,000	TOTAL: $1,300,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Simpson, J. A.	HQ-LU/Carter, C. H.	99-Multi-Discip

NGR 14-001-008 **University of Chicago** **2042**
Meteorological interpretation of satellite radiation data

Period	*Obligations*	
09/01/70-10/31/78	FY78: $90,000	TOTAL: $1,372,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fujita, T. T.	GSFC/Wexler, R.	31-Atmos Sci

NGR 14-001-135 **University of Chicago** **2043**
Feasibility of the alpha scattering technique for Martian surface analysis

Period	*Obligations*	
02/25/69-09/30/78	FY78: $70,816	TOTAL: $709,844
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Turkevich, A. L.	HQ-SL/Dwornik, S. E.	32-Geological Sci
	HQ-SL/Boyce, J. M.	

NGR 14-001-147 **University of Chicago** **2044**
Interferometric high-resolution spectroscopy of optical interstellar lines

Period	*Obligations*	
03/18/70-12/31/78	FY78: $30,448	TOTAL: $231,608
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hobbs, L. M.	HQ-SC/Rosendhal, J. D.	11-Astronomy
	HQ-SC/Roman, N. G.	

NGR 14-001-194 **University of Chicago** **2045**
Quantitative spectroscopy of planetary atmospheres

Period	*Obligations*	
07/20/71-04/14/79	FY78:	TOTAL: $190,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kaplan, L. D.	HQ-SL/Fellows, R. F.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	

NGR 14-001-211 **University of Chicago** **2046**
Far infrared photometry of H II regions and planets using the NASA 30 cm flying infrared telescope

Period	*Obligations*	
02/14/72-04/30/79	FY78: $42,000	TOTAL: $301,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Harper, D. A., Jr.	ARC/Cameron, R. M.	11-Astronomy
	ARC/Mason, R. H.	

NGR 14-001-225 **University of Chicago** **2047**
Physiology of the vestibular system of the squirrel monkey

Period	*Obligations*	
05/12/67-11/30/78	FY78: $45,000	TOTAL: $377,893
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Goldberg, J. M.	ARC/Daunton, N. G.	51-Biology
Fernandez, C.		

NGR 14-001-227 **University of Chicago** **2048**
Photometry of galactic and extragalactic far infrared sources using the 91.5 cm airborne infrared telescope

Period	*Obligations*	
02/27/73-03/31/79	FY78: $75,056	TOTAL: $438,263
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Harper, D. A., Jr.	ARC/Gillespie, C. M., Jr.	11-Astronomy
	ARC/McClenahan, J. O.	

NGR 14-001-249 **University of Chicago** **2049**
Physical properties of solar nebula as deduced from chondrites

Period	*Obligations*	
05/14/73-03/31/81	FY78: $124,337	TOTAL: $572,456
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Grossman, L.	HQ-SL/French, B. M.	32-Geological Sci
Davis, A. M.	HQ-SL/Quaide, W. L.	

NSG 2057 **University of Chicago** **2050**
Study of sensitive detection system for far infrared astronomy

Period	*Obligations*	
12/01/74-09/30/78	FY78: $30,000	TOTAL: $125,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hildebrand, R. H.	ARC/Gillespie, C. M., Jr.	11-Astronomy
	ARC/Cameron, R. M.	

NSG 2261 **University of Chicago** **2051**
Far infrared and submillimeter astronomy with the Lear Jet Observatory

Period	*Obligations*	
10/01/77-09/30/78	FY78: $40,000	TOTAL: $40,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hildebrand, R. H.	ARC/Cameron, R. M.	11-Astronomy
	ARC/Mason, R. H.	

NSG 5202 **University of Chicago** **2052**
Study of interstellar clouds containing atomic and molecular constituents

Period	*Obligations*	
09/01/77-08/31/79	FY78:	TOTAL: $12,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Simpson, J. A.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5291 **University of Chicago** **2053**
Molecular hydrogen experimentation with Copernicus

Period	*Obligations*	
07/15/78-07/14/79	FY78: $3,796	TOTAL: $3,796
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Simpson, J. A.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 7212 **University of Chicago** **2054**
Nuclear astrophysics effects in meteoritic and lunar material

Period	*Obligations*	
03/01/76-02/28/79	FY78: $39,803	TOTAL: $108,565
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Schramm, D. N.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. E.	

NSG 7288 **University of Chicago** **2055**
Magnetospheric and interplanetary investigations based on data from instruments on the Mariner-10 mission to Mars

Period	*Obligations*	
11/01/76-10/31/77	FY78:	TOTAL: $40,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Simpson, J. A.	HQ-ST/Taylor, W. W.	31-Atmos Sci
	HQ-ST/Schmerling, E. R.	

NSG 7303 University of Chicago 2056
Applications of electron microscopy in molecular exobiology and extraterrestrial research

Period	Obligations	
12/01/76-11/30/78	FY78: $55,000	TOTAL: $105,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Moran, H. F.	HQ-SB/Larson, C. A. HQ-SB/Winter, D. L.	51-Biology

NSG 7356 University of Chicago 2057
Balloon-borne spectroscopy of stratospheric constituents

Period	Obligations	
06/01/77-12/31/78	FY78: $93,000	TOTAL: $142,996
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kaplan, L. D.	HQ-ST/Seals, R. K., Jr. HQ-ST/Tilford, S. G.	31-Atmos Sci

NSG 7464 University of Chicago 2058
Studies of the energy spectrum of cosmic ray electrons

Period	Obligations	
07/01/78-06/30/79	FY78: $43,032	TOTAL: $43,032
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Muller, D.	HQ-SC/Opp, A. G.	31-Atmos Sci

NAS 8-32993 University of Illinois - Chicago Circle 2059
Spacelab experiment definition relating to basic soil behavior and dynamic properties

Period	Obligations	
04/01/78-12/01/78	FY78: $10,000	TOTAL: $10,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Silver, M. L.	MSFC/Costes, N.	44-Civil Engr

NCA 2-330701 University of Illinois - Chicago Circle 2060
Improved models for computing the effects of aerosols on atmospheric radiation

Period	Obligations	
10/15/76-11/01/78	FY78: $6,720	TOTAL: $22,345
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Krinsley, D. Greeley, R.	ARC/Pollack, J. B.	31-Atmos Sci

NSG 1150 University of Illinois - Chicago Circle 2061
A kinetic-theory approach to turbulent mixing and combustion

Period	Obligations	
03/01/75-10/31/79	FY78: $40,647	TOTAL: $123,915
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Chung, P. M.	LARC/Evans, J. S. LARC/Beach, H. L., Jr.	41-Aero Engr

NSG 7247 University of Illinois - Chicago Circle 2062
Inverse problems in physics and geophysics

Period	Obligations	
07/01/76-12/31/78	FY78: $18,000	TOTAL: $48,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Barcilon, V.	HQ-RR/Randolph, L.P. JPL/Chahine, M.	21-Mathematics

NAS 1-14731 University of Illinois - Urbana 2063
Investigation of predictive display symbology for terminal configured vehicle

Period	Obligations	
12/20/76-12/14/78	FY78: $20,039	TOTAL: $103,352
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Jensen, R. S.	LARC/Salmirs, S. LARC/Schult, E. D.	41-Aero Engr

NAS 5-24275 University of Illinois - Urbana 2064
Application and design refinement of the massively parallel processing computer

Period	Obligations	
09/12/77-08/19/80	FY78: $60,000	TOTAL: $115,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Slotnick, D. L.	GSFC/Schaefer, D. H.	45-Elec Engr

NAS 5-25062 University of Illinois - Urbana 2065
Study of antenna diffraction problems

Period	Obligations	
06/23/78-06/22/79	FY78: $44,143	TOTAL: $44,143
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mittra, R. Lee, S.	GSFC/Keating, T., Jr.	45-Elec Engr

NAS 9-15328 University of Illinois - Urbana 2066
Definition of Spacelab 1 experiment on effects of prolonged weightlessness on the humoral response in humans

Period	Obligations	
07/15/77-07/01/81	FY78: $36,423	TOTAL: $47,738
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Voss, E. W.	JSC/Melgares, E.	59-Life Sci, NEC

NGL 14-005-140 University of Illinois - Urbana 2067
Research on fluid dynamic and heat transfer problems of modern air breathing propulsive systems

Period	Obligations	
05/23/69-05/31/79	FY78:	TOTAL: $257,661
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Chow, W. L.	LERC/Bober, L. J.	41-Aero Engr

NGR 14-005-176 University of Illinois - Urbana 2068
Investigation of the atmosphere of Jupiter by studying the ammonia feature at a wavelength of 1.26 cm

Period	Obligations	
05/22/72-01/01/79	FY78:	TOTAL: $50,437
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Dickel, J. R.	HQ-SL/Brunk, W. E. HQ-SL/Quaide, W. L.	11-Astronomy

NGR 14-005-181 University of Illinois - Urbana 2069
Rocket studies of the lower ionosphere

Period	Obligations	
08/01/71-10/31/78	FY78: $450,000	TOTAL: $3,134,817
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bowhill, S. A.	WFC/Gray, J. W. WFC/Pless, R. H.	19-Phys Sci, NEC

NGR 14-005-200 **University of Illinois - Urbana** **2070**
Studies of discharge mechanisms occurring in high pressure gases with applications to high efficiency high power lasers

Period 04/06/73-10/01/78 *Obligations* FY78: $40,000 TOTAL: $189,860
Prin. Invest. Verdeyen, J. T.; Cherrington, B. E.
NASA Tech. Officer LERC/Dunning, J. W., Jr.
CASE Category 13-Physics

NGR 14-005-202 **University of Illinois - Urbana** **2071**
Implementation of Illiac IV algorithms for multispectral image interpretation

Period 02/27/73-09/30/78 *Obligations* FY78: TOTAL: $391,996
Prin. Invest. Ray, R. M.
NASA Tech. Officer ARC/Slye, R. E.; ARC/Briggs, B. R.
CASE Category 22-Computer Science

NSG 1400 **University of Illinois - Urbana** **2072**
Development of scaling laws for granular materials discharged from an agricultural airplane

Period 03/01/77-12/31/77 *Obligations* FY78: TOTAL: $10,224
Prin. Invest. Ormsbee, A. I.
NASA Tech. Officer LARC/Jordan, F. L., Jr.
CASE Category 19-Phys Sci, NEC

NSG 1434 **University of Illinois - Urbana** **2073**
Development of methods for predicting and measuring distribution patterns of aerial sprays

Period 06/21/77-10/20/78 *Obligations* FY78: $68,988 TOTAL: $84,276
Prin. Invest. Ormsbee, A. I.; Sivier, K. R.
NASA Tech. Officer LARC/Jordan, F. L., Jr.
CASE Category 41-Aero Engr

NSG 1471 **University of Illinois - Urbana** **2074**
Mechanisms and methodologies for the design and construction of communicating concurrent processes in real-time environments

Period 11/15/77-11/14/78 *Obligations* FY78: $65,170 TOTAL: $65,170
Prin. Invest. Campbell, R. H.
NASA Tech. Officer LARC/Will, R. W.; LARC/Foudriat, E. C.
CASE Category 21-Mathematics

NSG 1547 **University of Illinois - Urbana** **2075**
An experimental investigation of 235Uf6 fission produced plasmas

Period 07/01/78-06/30/79 *Obligations* FY78: $40,000 TOTAL: $40,000
Prin. Invest. Miley, G. H.
NASA Tech. Officer LARC/Hohl, F.
CASE Category 13-Physics

NSG 2099 **University of Illinois - Urbana** **2076**
Neural control of locomotor performance in insects

Period 09/01/75-12/31/78 *Obligations* FY78: TOTAL: $57,209
Prin. Invest. Heath, J. E.; May, M.
NASA Tech. Officer ARC/Williams, B. A.
CASE Category 51-Biology

NSG 2119 **University of Illinois - Urbana** **2077**
Pilot interaction with automated airborne decision making systems

Period 11/01/75-08/21/79 *Obligations* FY78: $61,604 TOTAL: $194,264
Prin. Invest. Rouse, W. B.
NASA Tech. Officer ARC/Palmer, E. A.; ARC/Wempe, T. E.
CASE Category 99-Multi-Discip

NSG 3043 **University of Illinois - Urbana** **2078**
The effect of a zero g environment on flammability limits as determined using a standard flammability tube apparatus

Period 05/21/75-09/31/78 *Obligations* FY78: $254 TOTAL: $75,254
Prin. Invest. Strehlow, R. A.
NASA Tech. Officer LERC/Cochran, T. H.
CASE Category 43-Chem Engr

NSG 3098 **University of Illinois - Urbana** **2079**
Transient dynamic analysis of high-speed lightly loaded cylindrical roller bearings

Period 06/06/76-10/05/78 *Obligations* FY78: TOTAL: $22,510
Prin. Invest. Conry, T. F.
NASA Tech. Officer LERC/Scribbe, H. W.
CASE Category 46-Mech Engr

NSG 5049 **University of Illinois - Urbana** **2080**
Effects of atmospheric refraction and turbulence on the accuracy of laser systems

Period 02/01/75-12/31/78 *Obligations* FY78: $40,098 TOTAL: $140,270
Prin. Invest. Gardner, C. S.
NASA Tech. Officer GSFC/Bufton, J. L.; GSFC/Fitzmaurice, M. W.
CASE Category 19-Phys Sci, NEC

NSG 5213 **University of Illinois - Urbana** **2081**
Studies of the transport of nitric acid using AE satellite data

Period 10/01/77-03/31/79 *Obligations* FY78: TOTAL: $24,957
Prin. Invest. Sechrist, C. F., Jr.
NASA Tech. Officer GSFC/Spencer, N. W.
CASE Category 13-Physics

NSG 5278 **University of Illinois - Urbana** **2082**
Search for spectra of interstellar molecules against hot stars

Period 06/15/78-12/14/79 *Obligations* FY78: $13,513 TOTAL: $13,513
Prin. Invest. Snyder, L. E.
NASA Tech. Officer GSFC/Donn, B. D.; GSFC/Stief, L. J.
CASE Category 11-Astronomy

ILLINOIS (Continued)

NSG 5294 **University of Illinois - Urbana** **2083**
Copernicus satellite observations

Period	*Obligations*	
08/01/78-07/31/79	FY78: $6,823	TOTAL: $6,823
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Crutcher, R. M.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 7044 **University of Illinois - Urbana** **2084**
Evolution of the cell and the translation process

Period	*Obligations*	
06/01/74-05/31/79	FY78: $45,000	TOTAL: $222,300
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Woese, C. R.	HQ-SB/Young, R. S.	12-Chemistry

W-14133 **University of Illinois - Urbana** **2085**
Conference on the Middle Atmosphere Program (MAP)

Period	*Obligations*	
06/24/76-04/01/77	FY78:	TOTAL: $4,890
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Unavailable	HQ-ST/King, J. H.	31-Atmos Sci

INDIANA

NCA 8-121 **Ball State University** **2086**
Investigation of cylindrical Fresnel lens as a solar collector

Period	*Obligations*	
12/10/75-10/09/76	FY78:	TOTAL: $22,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cosby, R.	MSFC/Hastings, L. J.	49-Engr, NEC

NCA 8-127 **Ball State University** **2087**
A joint project for study of cylindrical Fresnel lens as a solar concentrator

Period	*Obligations*	
01/18/77-07/17/77	FY78:	TOTAL: $12,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cosby, R.	MSFC/Hastings, L. J.	49-Engr, NEC

NCA 8-129 **Ball State University** **2088**
A joint project for study of cylindrical Fresnel lens as a solar concentrator

Period	*Obligations*	
08/10/77-11/09/77	FY78:	TOTAL: $3,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cosby, R.	MSFC/Hastings, L. J.	49-Engr, NEC

NAS 5-22987 **Indiana University - Bloomington** **2089**
Digital techniques applied to surface photometry of low contrast astronomical objects

Period	*Obligations*	
02/11/76-09/29/79	FY78: $7,000	TOTAL: $45,685
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Burkhead, M. S.	GSFC/Hobbs, R. W.	11-Astronomy

NAS 8-33087 **Indiana University - Bloomington** **2090**
Correlated ground base observations in support of the HEAO-1 X-ray observatory

Period	*Obligations*	
06/01/78-06/07/79	FY78: $29,977	TOTAL: $29,977
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mufson, S. L. Wisniewski, W. Z. Johnson, H. L.	MSFC/Dailey, C. C.	11-Astronomy

NCA 2-335702 **Indiana University - Bloomington** **2091**
Relationships between carbon, noble gases, and mineralogy in carbonaceous meteorites

Period	*Obligations*	
02/01/77-01/31/79	FY78: $17,600	TOTAL: $35,200
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hayes, J. M.	ARC/Chang, S.	12-Chemistry

NGR 15-003-118 **Indiana University - Bloomington** **2092**
Application of ultra-high sensitivity isotope ratio mass spectrometry to organic geochemistry and cosmochemistry

Period	*Obligations*	
06/20/72-05/31/79	FY78: $63,000	TOTAL: $476,966
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hayes, J. M.	HQ-SB/Young, R. S.	32-Geological Sci

NSG 7389 **Indiana University - Bloomington** **2093**
Development of gas extraction systems needed to prepare geologic samples for sulfur and oxygen isotopic analysis

Period	*Obligations*	
11/01/77-10/31/78	FY78: $9,190	TOTAL: $9,190
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ripley, E. M.	HQ-SB/Young, R. S.	32-Geological Sci

NSG 9072 **Indiana University - Bloomington** **2094**
Investigation of regolith evolution through a petrographic and electronprobe analysis of soil samples

Period	*Obligations*	
07/14/78-07/13/79	FY78: $9,900	TOTAL: $9,900
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Basu, A.	JSC/McKay, D. S.	32-Geological Sci

NSG 3183 **Indiana Univ. - Indianapolis** **2095**
Numerical solution of the compressible boundary layer equations with viscous-inviscid interaction

Period	*Obligations*	
01/16/78-01/15/79	FY78: $15,187	TOTAL: $15,187
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bodonyi, R. J.	LERC/Sockol, P. M. LERC/Sandercock, D. M.	41-Aero Engr

NAS 5-22816 **Purdue University** **2096**
Utility of correlation techniques on gravity and magnetic interpretation study

Period *Obligations*
11/24/75-08/31/78 FY78: TOTAL: $48,489

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Hinze, W. J. GSFC/Langel, R. A. 32-Geological Sci
Braile, L. W.

NAS 5-24462 **Purdue University** **2097**
Earth resources data processing remote terminal support

Period *Obligations*
02/23/78-02/22/79 FY78: $18,340 TOTAL: $18,340

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Phillips, T. L. GSFC/Alford, W. L. 22-Computer Science
Schwingendorf, S. K.

NAS 5-25030 **Purdue University** **2098**
Lithospheric models of the North American continent utilizing surface and satellite geophysical data

Period *Obligations*
05/04/78-07/03/79 FY78: $60,000 TOTAL: $60,000

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Hinze, W. J. GSFC/Langel, R. A. 32-Geological Sci
Braile, L. W.

NAS 6-2695 **Purdue University** **2099**
Services in support of a remote Laesys Terminal Flight Center

Period *Obligations*
11/15/75-01/31/79 FY78: $6,500 TOTAL: $35,186

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Phillips, T. L. WFC/Maurer, H. E. 39-Env Sci, NEC
Schwingendorf, S. K. WFC/Hancock, D. W.

NAS 6-2816 **Purdue University** **2100**
Develop plan to assemble SAR/LANDSAT data sets

Period *Obligations*
03/01/77-04/30/78 FY78: $10,689 TOTAL: $40,757

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Anuta, P. E. WFC/Maurer, H. E. 99-Multi-Discip
WFC/McGoogan, J. T.

NAS 9-15081 **Purdue University** **2101**
Technical coordination and implementation of remote sensing experiments for analogous vegetative areas in the United States and the Soviet Union

Period *Obligations*
08/01/76-11/15/78 FY78: $75,700 TOTAL: $211,700

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bauer, M. E. JSC/Grandfield, A. L. 39-Env Sci, NEC
JSC/McEwen, M. C.

NAS 9-15325 **Purdue University** **2102**
Develop an operational forest resource information system

Period *Obligations*
10/01/77-09/30/80 FY78: $240,000 TOTAL: $315,000

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Mroczynski, R. JSC/Joosten, R. E. 39-Env Sci, NEC

NAS 9-15466 **Purdue University** **2103**
Remote sensing of agriculture, earth resources and man's environment

Period *Obligations*
12/01/77-11/30/78 FY78: $1,151,964 TOTAL: $1,151,964

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Landgrebe, D. A. JSC/Erickson, J. D. 39-Env Sci, NEC

NAS 9-15508 **Purdue University** **2104**
Digital processing of LANDSAT/MSS and topographic data to improve capabilities for computerized mapping of forest cover types

Period *Obligations*
12/16/77-12/15/78 FY78: $92,163 TOTAL: $92,163

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Hoffer, R. M. JSC/Ansbury, D. L. 39-Env Sci, NEC

NGL 15-005-140 **Purdue University** **2105**
Origin of chondrites from relationships between fourteen key trace elements

Period *Obligations*
06/21/71-02/28/79 FY78: $60,000 TOTAL: $428,437

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Lipschutz, M. E. HQ-SL/French, B. M. 32-Geological Sci
HQ-SL/Quaide, W. L.

NGL 15-005-186 **Purdue University** **2106**
Application of remote sensing technology to solution of problems in management of resources

Period *Obligations*
06/19/73-05/31/80 FY78: TOTAL: $1,195,000

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Weismiller, R. A. HQ-ET/Vitale, J. A. 39-Env Sci, NEC

NGR 15-005-157 **Purdue University** **2107**
Lunar sample analysis

Period *Obligations*
03/01/72-12/31/78 FY78: TOTAL: $128,224

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Meyer, H. O. JSC/Harris, J. W. 13-Physics

NGR 15-005-191 **Purdue University** **2108**
Calculation of the flow field and the viscous inviscid flow interaction in aircraft inlets

Period *Obligations*
01/01/74-05/01/78 FY78: $2,962 TOTAL: $110,184

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Hoffman, J. D. LERC/Bishop, A. R. 41-Aero Engr

NSG 1278 **Purdue University** **2109**
Frequency effect on fatigue behavior of laminated composites
Period *Obligations*
01/09/76-05/08/79 FY78: $33,751 TOTAL: $88,487
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Sun, C. T. LARC/Roderick, G. L. 47-Materials Engr
LARC/Whitcomb, J. D.

NSG 2192 **Purdue University** **2110**
Joint cooperative program in computer graphics
Period *Obligations*
11/01/76-08/31/79 FY78: $65,295 TOTAL: $140,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Anderson, D. C. ARC/Gregory, T. J. 22-Computer Science

NSG 3071 **Purdue University** **2111**
Gas film cooling of turbine vane surfaces
Period *Obligations*
09/01/75-06/30/80 FY78: TOTAL: $53,067
Prin. Invest. *NASA Tech. Officer* *CASE Category*
L'Ecuyer, M. R. LERC/Davidson, H. W. 41-Aero Engr

NSG 3105 **Purdue University** **2112**
Expanding capabilities of NASA computer programs for fluid flow computations in turbomachinery
Period *Obligations*
06/01/76-05/31/79 FY78: TOTAL: $56,131
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Thompson, H. D. LERC/Katsanis, T. 41-Aero Engr
Ragsdell, K. M.

NSG 3119 **Purdue University** **2113**
An adaptive controller for an aircraft gas turbine propulsion system
Period *Obligations*
09/01/76-08/31/79 FY78: TOTAL: $60,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Leonard, R. G. LERC/Lehtinen, B. 41-Aero Engr

NSG 3135 **Purdue University** **2114**
Aerodynamics parameters affecting turbopropeller performance
Period *Obligations*
01/15/77-01/14/79 FY78: $50,333 TOTAL: $101,467
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Sullivan, J. P. LERC/Serafini, J. S. 41-Aero Engr

NSG 3185 **Purdue University** **2115**
Analytical and experimental study on impact damage of laminated composites
Period *Obligations*
10/31/77-01/31/79 FY78: $44,205 TOTAL: $44,205
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Sun, C. T. LERC/Chamis, C. C. 41-Aero Engr

NSG 3213 **Purdue University** **2116**
Fuel sprays in high-speed air flows
Period *Obligations*
09/01/78-08/31/79 FY78: $99,997 TOTAL: $99,997
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Skifstadt, J. G. LERC/Lyons, V. J. 41-Aero Engr
Lefebvre, A. H.

NSG 4003 **Purdue University** **2117**
Handling and ride qualities of large flexible control-configured aircraft
Period *Obligations*
01/01/75-06/30/79 FY78: $25,108 TOTAL: $164,817
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Laver, J. A. DFRC/Berry, D. T. 41-Aero Engr
DFRC/Cazier, F. W.

NSG 7167 **Purdue University** **2118**
High-time resolution photometry of flare stars simultaneous with X-ray satellite observations
Period *Obligations*
10/01/75-09/30/78 FY78: $8,084 TOTAL: $22,615
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Moffett, T. J. HQ-SC/Rosendhal, J. D. 11-Astronomy
HQ-SC/Roman, N. G.

NSG 7278 **Purdue University** **2119**
Characterization and elucidation of the mechanism of mechanical stress inhibition of plant growth
Period *Obligations*
10/01/76-09/30/78 FY78: $30,000 TOTAL: $58,476
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Mitchell, C. A. HQ-SB/Halstead, T. W. 51-Biology
HQ-SB/Geib, D. S.

NAS 3-20087 **University of Notre Dame** **2120**
Study of burning of liquid pools in reduced gravity
Period *Obligations*
02/23/76-06/07/77 FY78: TOTAL: $27,898
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Kanury, A. M. LERC/Cochran, T. H. 12-Chemistry

NAS 3-21018 **University of Notre Dame** **2121**
Feasibility study of liquid pool burning in reduced gravity
Period *Obligations*
07/28/77-05/10/79 FY78: $16,177 TOTAL: $45,648
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Kanury, A. M. LERC/Haggard, J. B. 11-Astronomy

NSG 1419 **University of Notre Dame** **2122**
Structure of separated flow regions occurring near the leading edge of air foils including transition
Period *Obligations*
06/01/77-12/31/78 FY78: $50,000 TOTAL: $50,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Mueller, T. J. LARC/Somers, D. M. 41-Aero Engr

INDIANA (Continued)

NSG 3037 **University of Notre Dame** **2123**
Influence of blade loading on the acoustic response of a cascade

Period	*Obligations*	
08/15/74-01/14/78	FY78:	TOTAL: $56,115
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Atassi, H.	LERC/Feiler, C. E.	41-Aero Engr
Berg, D.	LERC/Goldstein, M. E.	

NSG 3048 **University of Notre Dame** **2124**
Alternatives for jet engine control

Period	*Obligations*	
03/01/75-03/01/79	FY78: $35,000	TOTAL: $123,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sain, M. K.	LERC/Seldner, K.	45-Elec Engr
Leake, R. J.		

NSG 3133 **University of Notre Dame** **2125**
Correlation of single stage data to obtain improved models for loss in axial compressors

Period	*Obligations*	
11/01/76-02/28/79	FY78: $4,951	TOTAL: $39,828
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Roberts, W. B.	LERC/Crouse, J. E.	41-Aero Engr
Sloviski, J. A.	LERC/Sandercock, D. M.	

NSG 3182 **University of Notre Dame** **2126**
Investigation of electromagnetic waves on superconducting magnets as mechansim of potential coil damage

Period	*Obligations*	
01/03/78-06/04/79	FY78: $16,000	TOTAL: $16,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gabriel, G. J.	LERC/Burkhart, J. A.	45-Elec Engr
	LERC/Bercaw, R. W.	

NSG 3195 **University of Notre Dame** **2127**
Study of aerodynamic mechanism for noise generated by rotor-stator interaction

Period	*Obligations*	
05/01/78-04/30/81	FY78: $103,720	TOTAL: $103,720
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Atassi, H.	LERC/Scott, J. N.	13-Physics
	LERC/Dittmar, J. H.	

IOWA

NAS 8-33013 **Iowa State University** **2128**
Study of the X-ray emission from a strong V-ray source

Period	*Obligations*	
05/02/78-05/01/79	FY78: $9,794	TOTAL: $9,794
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lamb, R. C.	MSFC/Dailey, C. C.	11-Astronomy

NCA 2-340704 **Iowa State University** **2129**
Two-dimensional shock diffraction

Period	*Obligations*	
04/01/77-12/31/78	FY78: $7,673	TOTAL: $26,636
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Anderson, D. A.	ARC/Kutler, P.	49-Engr, NEC

NCA 2-340705 **Iowa State University** **2130**
Optimal nodal point distribution for finite difference error control

Period	*Obligations*	
04/01/77-02/28/79	FY78:	TOTAL: $9,977
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Pierson, B. L.	ARC/Kutler, P.	49-Engr, NEC

NCA 2-340706 **Iowa State University** **2131**
Acceleration of implicit finite-difference algorithms for convection equations

Period	*Obligations*	
06/01/77-09/30/78	FY78:	TOTAL: $11,178
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Tannehill, J. C.	ARC/Steger, J. L.	21-Mathematics

NCA 2-340801 **Iowa State University** **2132**
Theoretical investigations of the structure of low temperature stellar atmospheres and the structure and evolution of the outer planets

Period	*Obligations*	
11/01/77-10/31/78	FY78: $13,693	TOTAL: $13,693
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Grossman, A. S.	ARC/Pollack, J. B.	13-Physics
Podolak, M.	ARC/Reynolds, R. T.	

NCA 2-340802 **Iowa State University** **2133**
Simulation of Martian aeolian phenomena

Period	*Obligations*	
09/01/78-08/31/79	FY78: $17,039	TOTAL: $17,039
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Iversen, J. D.	ARC/Pollack, J. B.	49-Engr, NEC

NCA 2-340901 **Iowa State University** **2134**
Techniques for generating unsteady airfoil flows

Period	*Obligations*	
10/01/78-09/30/79	FY78: $12,645	TOTAL: $12,645
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cook, W. J.	ARC/Presley, L. L.	46-Mech Engr

NGR 16-002-038 **Iowa State University** **2135**
Calculation of viscous compressible flow

Period	*Obligations*	
10/07/71-08/01/79	FY78: $24,978	TOTAL: $140,168
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Tannehill, J. C.	ARC/Rakich, J. V.	41-Aero Engr
	ARC/Marvin, J. G.	

NSG 1372 **Iowa State University** 2136
Periodic analysis of large space structures
Period *Obligations*
01/01/77-09/30/79 FY78: $29,945 TOTAL: $59,945
Prin. Invest. *NASA Tech. Officer* *CASE Category*
McDaniel, T. J. LARC/Fralich, R. W. 49-Engr, NEC
LARC/Pinson, L. D.

NSG 1530 **Iowa State University** 2137
Exploration of the potential of feasible direction techniques coupled with structural sensitivity analysis in large-scale optimization
Period *Obligations*
06/01/78-08/31/78 FY78: $7,405 TOTAL: $7,405
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Pierson, B. L. LARC/Sobieski, J. 41-Aero Engr

NSG 1535 **Iowa State University** 2138
Analysis of flows with shocks
Period *Obligations*
10/01/78-09/30/79 FY78: $29,961 TOTAL: $29,961
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Anderson, D. A. LARC/Salas, M. D. 41-Aero Engr

NSG 1538 **Iowa State University** 2139
Symbolic solution of linear differential equations
Period *Obligations*
06/01/78-05/31/79 FY78: $7,186 TOTAL: $7,186
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Feinberg, R. B. LARC/Shoosmith, J. N. 21-Mathematics

NSG 2040 **Iowa State University** 2140
Role of turbulence in vortex wake decay
Period *Obligations*
09/01/74-12/31/78 FY78: $42,820 TOTAL: $161,738
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Iversen, J. D. ARC/Rossow, V. J. 41-Aero Engr
ARC/Corsiglia, V. R.

NSG 2091 **Iowa State University** 2141
Study of viscous cross-flow effects on cylinders at high Reynolds numbers
Period *Obligations*
07/01/75-06/30/79 FY78: $20,000 TOTAL: $101,844
Prin. Invest. *NASA Tech. Officer* *CASE Category*
James, W. D. ARC/Malcolm, G. N. 41-Aero Engr
ARC/Chapman, G. T.

NSG 2257 **Iowa State University** 2142
Low speed, high lift aerodynamics
Period *Obligations*
09/01/77-12/31/78 FY78: TOTAL: $35,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
James, W. D. ARC/Olson, L. E. 41-Aero Engr
ARC/Corsiglia, V. R.

NSG 3033 **Iowa State University** 2143
Blade surface boundary layer and wake computation model study
Period *Obligations*
09/01/74-02/28/78 FY78: TOTAL: $44,493
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Serovy, G. K. LERC/Sockol, P. M. 41-Aero Engr

NSG 5199 **Iowa State University** 2144
Search for an X-ray identification of a strong Y-ray source
Period *Obligations*
08/01/77-12/31/78 FY78: $8,662 TOTAL: $11,498
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Lamb, R. C. GSFC/Kupperian, J. E., Jr. 11-Astronomy

NAS 1-13129 **University of Iowa** 2145
Hawkeye/neutral point Explorer experiments
Period *Obligations*
05/20/74-03/31/79 FY78: TOTAL: $1,128,617
Prin. Invest. *NASA Tech. Officer* *CASE Category*
VanAllen, J. A. LARC/Coffee, C. W., Jr. 13-Physics
Frank, L. A.
Gurnett, D. A.

NAS 2-6553 **University of Iowa** 2146
Pioneer F/G data analysis-Jovian charged particles experiment
Period *Obligations*
07/21/71-10/01/78 FY78: $87,781 TOTAL: $661,725
Prin. Invest. *NASA Tech. Officer* *CASE Category*
VanAllen, J. A. ARC/Hall, C. F. 11-Astronomy
ARC/Porter, D. L.

NAS 5-11064 **University of Iowa** 2147
Low energy electrons and protons experiment for IMP-H & J
Period *Obligations*
05/31/68-12/31/78 FY78: $72,000 TOTAL: $840,656
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Frank, L. A. GSFC/Davis, M. A. 13-Physics

NAS 5-11279 **University of Iowa** 2148
Solar wind plasma wave experiment for the Helios missions
Period *Obligations*
03/30/70-02/15/79 FY78: $55,000 TOTAL: $1,514,145
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Gurnett, D. A. GSFC/White, C. 11-Astronomy
Anderson, R. R.

NAS 5-11431 **University of Iowa** 2149
Ac electric and magnetic fields experiment
Period *Obligations*
05/21/71-06/30/79 FY78: $62,000 TOTAL: $650,387
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Gurnett, D. A. GSFC/Davis, M. A. 31-Atmos Sci

NAS 5-20093 **University of Iowa** **2150**
Plasma wave experiment for International Sun-Earth Explorer spacecraft A&B

Period *Obligations*
05/20/74-07/30/80 FY78: $244,822 TOTAL: $1,465,245

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Gurnett, D. A. GSFC/Davis, M. A. 13-Physics

NAS 5-20094 **University of Iowa** **2151**
Magnetospheric and interplanetary plasma for International Sun-Earth Explorer mother & daughter spacecraft

Period *Obligations*
05/20/74-10/30/79 FY78: $356,000 TOTAL: $1,179,642

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Frank, L. A. GSFC/Davis, M. A. 13-Physics

NAS 5-24293 **University of Iowa** **2152**
Global auroral imaging at visible and ultraviolet wavelengths for the dynamic Explorer

Period *Obligations*
07/26/77-04/28/81 FY78: $519,614 TOTAL: $519,614

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Frank, L. A. GSFC/Fellerman, K. D. 13-Physics
Ackerson, K. L. GSFC/Lidston, J. M.
Carovillano, R. L.

NAS 5-24294 **University of Iowa** **2153**
Plasma wave experiment for the dynamic Explorer

Period *Obligations*
07/26/77-04/28/81 FY78: $387,779 TOTAL: $387,779

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Shawhan, S. D. GSFC/Fellerman, K. D. 13-Physics
Gurnett, D. A. GSFC/Lidston, J. M.

NAS 5-24336 **University of Iowa** **2154**
International Sun-Earth Explorer-A experiment data reduction and analysis

Period *Obligations*
10/11/77-10/10/80 FY78: $47,000 TOTAL: $47,000

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Gurnett, D. A. GSFC/Heppner, J. P. 13-Physics

NAS 8-32807 **University of Iowa** **2155**
Definition of instruments for an ejectable plasma diagnostics package for Spacelab 2 mission

Period *Obligations*
10/03/77-09/30/78 FY78: $837,838 TOTAL: $837,838

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Shawhan, S. D. MSFC/Guynes, B. V. 31-Atmos Sci
MSFC/Ise, R.

NGL 16-001-002 **University of Iowa** **2156**
Theoretical & experimental studies related to particles & fields associated with major bodies of solar system & with interplanetary space

Period *Obligations*
05/23/62-01/31/80 FY78: $240,000 TOTAL: $5,054,196

Prin. Invest. *NASA Tech. Officer* *CASE Category*
VanAllen, J. A. HQ-ST/King, J. H. 13-Physics
HQ-ST/Schmerling, E. R.

NGL 16-001-043 **University of Iowa** **2157**
Waves in plasmas

Period *Obligations*
03/28/67-11/30/80 FY78: $117,000 TOTAL: $889,986

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Gurnett, D. A. HQ-ST/King, J. H. 13-Physics
HQ-ST/Schmerling, E. R.

NSG 1499 **University of Iowa** **2158**
Effects of misalignment on mechanical behavior of metals in creep

Period *Obligations*
03/01/78-08/31/79 FY78: $29,632 TOTAL: $29,632

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Wu, H. C. LARC/Rummler, D. R.
LARC/Swann, R. T. 47-Materials Engr

NSG 2300 **University of Iowa** **2159**
Experimental study of trailing edge and near-wake flows

Period *Obligations*
02/01/78-01/31/79 FY78: $51,450 TOTAL: $51,450

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Ramaprian, B. R. ARC/Marvin, J. G. 41-Aero Engr
Patel, V. C. ARC/Cleary, J. W.

NSG 2327 **University of Iowa** **2160**
Laser manipulation of metallic vapors

Period *Obligations*
08/01/78-07/31/79 FY78: $57,876 TOTAL: $57,876

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Stwalley, W. C. ARC/Stallcop, J. R. 41-Aero Engr

NSG 3117 **University of Iowa** **2161**
Boundary layer flow transition and separation in inlets of V/STOL and other high performance propulsion system

Period *Obligations*
01/01/77-11/01/79 FY78: TOTAL: $32,748

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Chou, D. C. LERC/Stockman, N. O. 41-Aero Engr
LERC/Shaw, R. J.

IOWA (Continued)

NSG 7257 **University of Iowa** **2162**
Fracture theory for plastics

Period	*Obligations*	
07/01/76-09/30/78	FY78: $20,160	TOTAL: $40,160
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Valanis, K. C.	HQ-RR/Schwenk, F. C.	47-Materials Engr

NSG 7412 **University of Iowa** **2163**
Analysis of cometary gas and dust

Period	*Obligations*	
01/01/78-12/31/78	FY78: $22,255	TOTAL: $22,255
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Neff, J. S.	HQ-SL/Brunk, W. E. HQ-SL/Quaide, W. L.	11-Astronomy

NSG 7471 **University of Iowa** **2164**
Experiments on spin aligned atoms

Period	*Obligations*	
07/01/78-06/30/79	FY78: $49,460	TOTAL: $49,460
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Stwalley, W. C.	HQ-RR/Henry, W.	13-Physics

NSG 9060 **University of Iowa** **2165**
Neurocirculatory control mechanisms in humans: Role of cardiopulmonary baroreceptors

Period	*Obligations*	
08/01/77-07/31/79	FY78: $23,680	TOTAL: $45,899
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Abboud, F. M.	JSC/Hull, W. E.	53-Other Medical

KANSAS

NAS 9-14533 **Kansas State University** **2166**
Prediction of wheat yield

Period	*Obligations*	
02/15/75-01/31/79	FY78: $60,000	TOTAL: $319,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Feyerherm, A. M.	JSC/Barnett, T. L.	39-Env Sci, NEC

NAS 9-14899 **Kansas State University** **2167**
Estimated winter wheat yield from crop growth predicted by LANDSAT

Period	*Obligations*	
03/15/76-12/31/78	FY78: $59,834	TOTAL: $152,734
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kanemasu, E. T.	JSC/Barnett, T. L.	31-Atmos Sci

NGL 17-001-026 **Kansas State University** **2168**
Infrared laboratory studies of synthetic planetary atmospheres

Period	*Obligations*	
01/10/67-11/30/79	FY78:	TOTAL: $252,554
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Williams, D. B.	HQ-SL/Murphy, R. E. HQ-SL/Mitz, M. A.	31-Atmos Sci

NSG 5101 **Kansas State University** **2169**
Research of solar insolation at the earth surface from cloud cover

Period	*Obligations*	
03/01/76-08/31/77	FY78:	TOTAL: $24,920
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kanemasu, E. T.	GSFC/Salomonson, V. V. GSFC/Ormsby, J. P.	31-Atmos Sci

NAS 5-20943 **University of Kansas** **2170**
Analysis of data for ERTS follow-on investigation

Period	*Obligations*	
03/10/75-04/09/78	FY78:	TOTAL: $62,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Haralick, R.	GSFC/Broderick, J. C.	32-Geological Sci

NAS 5-22325 **University of Kansas** **2171**
Earth observation radar concept study

Period	*Obligations*	
04/18/75-10/15/78	FY78: $2,000	TOTAL: $66,447
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Moore, R. K.	GSFC/Eckerman, J.	32-Geological Sci

NAS 5-23777 **University of Kansas** **2172**
Microwave remote sensing of snow

Period	*Obligations*	
11/23/76-02/22/79	FY78: $40,000	TOTAL: $150,085
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ulaby, F. T.	GSFC/Rango, A. GSFC/Shive, J.	45-Elec Engr

NAS 9-14052 **University of Kansas** **2173**
Joint soil moisture experiment

Period	*Obligations*	
04/01/74-01/31/79	FY78: $169,216	TOTAL: $574,394
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ulaby, F. T.	JSC/Demel, K. J. JSC/Baldwin, R. R.	39-Env Sci, NEC

NAS 9-15421 **University of Kansas** **2174**
Radar measurements in agricultural applications

Period	*Obligations*	
10/01/77-09/30/78	FY78: $125,000	TOTAL: $125,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ulaby, F. T.	JSC/Demel, K. J.	31-Atmos Sci

NAS 9-15602 **University of Kansas** **2175**
Microwave satellite sensor trade-off analysis

Period	*Obligations*	
05/15/78-07/15/79	FY78: $99,500	TOTAL: $99,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Holtzman, J. C.	JSC/Matthews, R. E.	39-Env Sci, NEC

NCA 2-365702 **University of Kansas** **2176**
Buffeting of space probes

Period	*Obligations*	
12/16/76-12/31/78	FY78: $20,368	TOTAL: $42,568
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Muirhead, V. U.	ARC/Seiff, A.	41-Aero Engr

NCA 2-365801 **University of Kansas** **2177**
Joint use of specialized resources to support quantification and mathematical modeling of closed ecosystems

Period	*Obligations*	
05/15/78-05/15/79	FY78: $9,185	TOTAL: $9,185
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Himmelstein, K.	ARC/Johnson, R. D.	43-Chem Engr

NGL 17-004-024 **University of Kansas** **2178**
Research on the applications of satellite remote sensing

Period	*Obligations*	
04/06/72-03/31/81	FY78: $100,000	TOTAL: $800,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Barr, B. G.	HQ-ET/Vitale, J. A.	39-Env Sci, NEC

NGR 17-002-072 **University of Kansas** **2179**
Advanced technology applications for general aviation aircraft

Period	*Obligations*	
10/14/69-09/16/78	FY78: $3,650	TOTAL: $959,702
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kohlman, D. L.	LARC/Crane, H. L.	41-Aero Engr

NGR 17-004-027 **University of Kansas** **2180**
An experimental investigation of lightning damage to selected composite materials and associated protective systems

Period	*Obligations*	
05/18/72-02/28/78	FY78:	TOTAL: $96,607
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lenzen, K. H.	LARC/Pride, R. A.	41-Aero Engr
Lorenz, S. A.	LARC/Davis, J. G., Jr.	

NSG 1046 **University of Kansas** **2181**
Effects of aeroelasticity on control effectiveness

Period	*Obligations*	
06/10/74-09/30/79	FY78: $21,461	TOTAL: $161,350
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Roskam, J.	LARC/Lamar, J. E.	41-Aero Engr
Lan, C. E.	LARC/Polhamus, E. C.	
Mehrotra, S.		

NSG 1139 **University of Kansas** **2182**
Further applications of a wing-jet interaction theory

Period	*Obligations*	
01/01/75-10/31/78	FY78: $10,057	TOTAL: $77,608
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lan, C. E.	LARC/Campbell, J. F.	41-Aero Engr

NSG 1269 **University of Kansas** **2183**
Methods for the prediction of primary creep behavior in metals

Period	*Obligations*	
01/01/76-09/30/78	FY78:	TOTAL: $64,294
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Zerwekh, R. P.	LARC/Rummler, D. R.	
	LARC/Stein, B. A.	47-Materials Engr

NSG 1281 **University of Kansas** **2184**
Statistical distribution of mechanical properties of graphite-epoxies

Period	*Obligations*	
07/15/76-07/14/79	FY78: $22,464	TOTAL: $69,440
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Reese, C. D.	LARC/Howell, W. E.	47-Materials Engr
	LARC/Pride, R. A.	

NSG 1301 **University of Kansas** **2185**
Reduce interior noise in general aviation airplanes

Period	*Obligations*	
05/01/76-04/30/79	FY78: $69,200	TOTAL: $169,237
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Roskam, J.	LARC/Stephens, D. G.	41-Aero Engr
Strivastava, R.		

NSG 1397 **University of Kansas** **2186**
Remote sensing of oceans

Period	*Obligations*	
02/15/77-01/14/79	FY78:	TOTAL: $25,031
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Moore, R. K.	LARC/Schroeder, L. C.	
	LARC/Jones, W. L.	33-Oceanography

NSG 1533 **University of Kansas** **2187**
Pollution monitoring by turbidity and sediment examination

Period	*Obligations*	
05/29/78-08/18/78	FY78: $7,895	TOTAL: $7,895
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lenzen, K. H.	LARC/Pritchard, E. B.	39-Env Sci, NEC
McGhee, M. F.		

NSG 1537 **University of Kansas** **2188**
Investigation of optimum wing configurations with edge separation

Period	*Obligations*	
06/15/78-06/14/79	FY78: $24,996	TOTAL: $24,996
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lan, C. E.	LARC/Campbell, J. F.	41-Aero Engr

NSG 1543 **University of Kansas** **2189**
Research in advanced technology integration for General Aviation Synthesis Program (GASP) improvements

Period	*Obligations*	
06/15/78-01/14/79	FY78: $29,596	TOTAL: $29,596
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Roskam, J.	LARC/Holmes, B. J.	41-Aero Engr
Kohlman, D. L.		

NSG 1554 **University of Kansas** **2190**
Radar discrimination of oil spills on the sea

Period	*Obligations*	
07/24/78-07/23/79	FY78: $38,713	TOTAL: $38,713
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Moore, R. K.	LARC/Croswell, W. F.	45-Elec Engr
Yu, Y. S.	LARC/Fedors, J. C.	

NSG 3087 **University of Kansas** **2191**
Portable solar energy collector test unit

Period	*Obligations*	
11/15/75-11/14/77	FY78:	TOTAL: $42,707
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lenzen, K. H.	LERC/Forestieri, A. F.	46-Mech Engr
Hotchkiss, G. B.		

NSG 4006 **University of Kansas** **2192**
Structural analyses of ultra-high speed aircraft structural components

Period	*Obligations*	
05/01/75-01/15/78	FY78:	TOTAL: $40,861
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lenzen, K. H.	DFRC/Fields, R. A.	41-Aero Engr
	DFRC/Jenkins, J. M.	

NSG 4007 **University of Kansas** **2193**
Modification and testing of a remotely augmented vehicle system

Period	*Obligations*	
07/01/75-06/30/78	FY78:	TOTAL: $63,339
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Grose, D. L.	DFRC/Deets, D. A.	41-Aero Engr

NSG 4008 **University of Kansas** **2194**
Analysis of structural components for ultra high speed aircraft

Period	*Obligations*	
05/01/76-04/30/81	FY78:	TOTAL: $40,416
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lenzen, K. H.	DFRC/Jenkins, J. M.	41-Aero Engr

NSG 4009 **University of Kansas** **2195**
An investigation of drag reduction for tractor trailer vehicles

Period	*Obligations*	
07/01/76-11/01/77	FY78:	TOTAL: $9,052
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Muirhead, V. U.	DFRC/Saltzman, E. J.	49-Engr, NEC

NSG 4012 **University of Kansas** **2196**
Interfacing between ground computer and fly-by wire control system

Period	*Obligations*	
07/15/77-07/14/78	FY78:	TOTAL: $18,608
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Talley, H. E.	DFRC/Deets, D. A.	41-Aero Engr
Wolf, J.		

NSG 4017 **University of Kansas** **2197**
Analyze and test the flight control system for the DAST vehicle

Period	*Obligations*	
06/01/78-12/31/80	FY78: $53,076	TOTAL: $53,076
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kotsabasis, A.	DFRC/Edwards, J. W.	41-Aero Engr
Roskam, J.	DFRC/Deets, D. A.	

NSG 7351 **University of Kansas** **2198**
Structural study of the Kentland, Indiana impact structure

Period	*Obligations*	
05/17/77-12/31/78	FY78:	TOTAL: $13,169
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
VanSchmus, W. R.	HQ-SL/Goldstein, B. E.	
	HQ-SL/Quaide, W. L.	32-Geological Sci

NSG 8046 **University of Kansas** **2199**
A database system to support image algorithm evaluation

Period	*Obligations*	
11/15/76-12/31/77	FY78:	TOTAL: $36,174
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lien, Y. E.	MSFC/Rayroe, R. G.	32-Geological Sci
	MSFC/Roman, H. A.	

NGR 17-003-021 **Wichita State University** **2200**
Experimental studies of flow separation and stalling on two-dimensional airfoils at low speeds, phase I

Period	*Obligations*	
12/01/73-01/31/79	FY78: $41,903	TOTAL: $164,108
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rodgers, E. J.	LARC/Noonan, K. W.	41-Aero Engr
Wentz, W. H., Jr.	LARC/McGhee, R. J.	

NSG 1165 **Wichita State University** **2201**
Computer and wind tunnel development of flaps and control surfaces for advanced technology general aviation airfoils

Period	*Obligations*	
06/01/75-10/31/78	FY78: $44,532	TOTAL: $215,036
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wentz, W. H., Jr.	LARC/McGhee, R. J.	41-Aero Engr
	LARC/Crane, H. L.	

KANSAS (Continued)

NSG 2134 **Wichita State University** **2202**
Wind tunnel investigations of computer designed airfoil section modifications

Period	*Obligations*	
02/01/76-07/31/78	FY78:	TOTAL: $34,391
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wentz, W. H., Jr. Seethavam, H. C.	ARC/Hicks, R. M.	41-Aero Engr

NSG 3186 **Wichita State University** **2203**
Numerical modeling of magnetohydrodynamic channel flow

Period	*Obligations*	
03/01/78-04/30/79	FY78: $9,901	TOTAL: $9,901
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Greywall, M. S.	LERC/Smith, J. M. LERC/Pian, C. C.	21-Mathematics

KENTUCKY

NSG 801 **Kentucky State University** **2204**
Zoological effects of variations in atmospheric oxygen levels

Period	*Obligations*	
02/27/74-04/28/79	FY78: $40,018	TOTAL: $178,770
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kloek, G.	KSC/Morrison, J. D.	59-Life Sci, NEC

NAS 2-8883 **University of Kentucky** **2205**
Design, fabricate, test and install oscillating platform

Period	*Obligations*	
06/02/75-06/30/78	FY78: $2,800	TOTAL: $122,198
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Knapp, C. E.	ARC/McCutcheon, E.	46-Mech Engr

NAS 3-20397 **University of Kentucky** **2206**
A conceptual design for Spacelab pool boiling experiments

Period	*Obligations*	
03/01/77-12/01/77	FY78:	TOTAL: $15,246
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lienhard, J. H.	LERC/Cochran, T. H.	13-Physics

NAS 9-15452 **University of Kentucky** **2207**
Development of limb volume measuring system

Period	*Obligations*	
11/01/77-10/31/78	FY78: $20,150	TOTAL: $20,150
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bhagat, P. K.	JSC/Hull, W. E.	53-Other Medical

NASW 3039 **University of Kentucky** **2208**
Operation of a state technical application program

Period	*Obligations*	
02/01/77-08/31/78	FY78: $175,000	TOTAL: $350,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Unavailable	HQ-ET/Dolby, W.	99-Multi-Discip

NSG 1424 **University of Kentucky** **2209**
A model for methane and carbon monoxide incorporating a time-varying wind field and tropopause height

Period	*Obligations*	
07/01/77-01/31/79	FY78: $10,020	TOTAL: $33,567
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Peters, L. K.	LARC/Reichle, H. G., Jr. LARC/Beck, S. M.	31-Atmos Sci

NSG 1501 **University of Kentucky** **2210**
An algorithm to generate input data from meteorological and space shuttle observations to validate a Ch4-Co model

Period	*Obligations*	
02/01/78-01/31/79	FY78: $30,000	TOTAL: $30,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Peters, L. K. Yamanis, J.	LARC/Reichle, H. G., Jr.	31-Atmos Sci

NSG 2318 **University of Kentucky** **2211**
Dynamically imposed oscillating forces for preventing cardiovascular deconditioning

Period	*Obligations*	
05/01/78-05/04/79	FY78: $60,405	TOTAL: $60,405
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Knapp, C. F.	ARC/Sandler, H.	53-Other Medical

NSG 3013 **University of Kentucky** **2212**
Fracture toughness testing of berylium

Period	*Obligations*	
07/01/74-12/30/77	FY78:	TOTAL: $20,340
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Conrad, H. Sargent, G. A.	LERC/Brown, W. F., Jr. LERC/Jones, M. H.	47-Materials Engr

NSG 3114 **University of Kentucky** **2213**
Study effects of buoyancy on flame spreading across beds of solid fuel

Period	*Obligations*	
07/01/76-09/30/78	FY78:	TOTAL: $29,783
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Altenkirch, R. A. Eichhorn, R.	LERC/Haggard, J. B.	46-Mech Engr

NSG 3125 **University of Kentucky** **2214**
A study of the effect of minor reactive metal additions on the fracture of iron-12-percent nickel alloy

Period	*Obligations*	
11/01/76-11/30/77	FY78:	TOTAL: $24,990
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Conrad, H. Sargent, G. A.	LERC/Stephens, J. R.	47-Materials Engr

KENTUCKY (Continued)

NAS 5-23664 **University of Louisville** **2215**
Provide an independent performance prediction of the Tiros-N data collection system

Period	*Obligations*	
08/02/76-08/02/77	FY78:	TOTAL: $20,670
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Shelton, D.	GSFC/Burdett, G. L.	42-Astro Engr

NAS 8-31233 **University of Louisville** **2216**
Turbopump technology improvements via transient rotordynamics analysis

Period	*Obligations*	
11/14/74-03/01/79	FY78: $42,231	TOTAL: $122,231
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Childs, D. W.	MSFC/Pitzenberger, F.D.	42-Astro Engr
	MSFC/Goetz, O. K.	

NAS 9-14632 **University of Louisville** **2217**
ASTP/Cosmos fundulus embryo development experiment

Period	*Obligations*	
04/14/75-02/15/78	FY78:	TOTAL: $133,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Keefe, J. R.	JSC/Hoffman, R. A.	51-Biology

NAS 9-15213 **University of Louisville** **2218**
Baseline study on the embryonic development of the mouse cranial sensory systems

Period	*Obligations*	
12/01/76-01/31/78	FY78:	TOTAL: $40,900
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Keefe, J. R.	JSC/Hoffman, R. A.	59-Life Sci, NEC
Fuller, P. M.		

NSG 2325 **University of Louisville** **2219**
Renal function, water and electrolyte balance and intestinal transport in hypokinetic animals

Period	*Obligations*	
06/01/78-10/31/78	FY78: $24,768	TOTAL: $24,768
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Musacchia, X. J.	ARC/Holton, E. M.	51-Biology

NSG 3200 **University of Louisville** **2220**
Dynamic seal testing and analysis for turbopump rotor dynamic stability and synchronous response technology improvements

Period	*Obligations*	
06/01/78-01/31/79	FY78: $34,999	TOTAL: $34,999
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Childs, D. W.	LERC/Fleming, D. P.	46-Mech Engr
Dressman, J. B.	LERC/Ludwig, L. P.	

NSG 7441 **University of Louisville** **2221**
Baseline studies on the embryonic development of the mouse cranial sensory systems

Period	*Obligations*	
02/01/78-01/31/79	FY78: $20,000	TOTAL: $20,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fuller, P. M.	HQ-SB/Halstead, T. W.	51-Biology
	HQ-SB/Geib, D. S.	

NSG 5238 **Western Kentucky University** **2222**
Observations of the ultraviolet spectrum of the peculiar radio source OJ-287 and related objects

Period	*Obligations*	
02/15/78-02/14/79	FY78: $6,813	TOTAL: $6,813
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hackney, R. L.	GSFC/Boggess, A.	11-Astronomy
Hackney, K. R.	GSFC/West, D. K.	

LOUISIANA

NAS13-38 **Louisiana State University - Baton Rouge** **2223**
Study of feeding value in water hyacinths

Period	*Obligations*	
06/22/76-07/25/77	FY78:	TOTAL: $20,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wolverton, V. C.	NSTL/Rusoff, L. L.	59-Life Sci, NEC

NGL 19-001-105 **Louisiana State University - Baton Rouge** **2224**
Interpretation of remote sensing data in the Bayou la Fourche region of South Louisiana

Period	*Obligations*	
04/06/72-05/31/79	FY78:	TOTAL: $425,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Whitehurst, C. A.	HQ-ET/Vitale, J. A.	39-Env Sci, NEC

NAS 9-9317 **Louisiana State University - Shreveport** **2225**
Study of modulatory effects of solar wind in galactic cosmic rays

Period	*Obligations*	
04/07/69-06/30/79	FY78:	TOTAL: $30,160
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Moss, T. A.	JSC/Giuli, R. T.	11-Astronomy

NSG 7357 **Northeast Louisiana University** **2226**
Mercury geologic mapping-Kuiper quadrangle

Period	*Obligations*	
06/01/77-05/31/79	FY78: $8,588	TOTAL: $16,417
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
DeHon, R. A.	HQ-SL/Dwornik, S. E.	32-Geological Sci
	HQ-SL/Boyce, J. M.	

NSG 7420 **Northeast Louisiana University** **2227**
Thickness of mare basalts: Western Mare Basin

Period	*Obligations*	
03/01/78-02/28/79	FY78: $11,716	TOTAL: $11,716
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
DeHon, R. A.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. M.	

NAS 1-15335 **Southern University - Baton Rouge** 2228
Atomic oxygen stimulated outgassing experiment for the long duration exposure facility, phases I and II

Period	*Obligations*	
04/07/78-03/06/79	FY78: $25,000	TOTAL: $25,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Scott, R. L., Jr.	LARC/O'Neal, R. L. LARC/Carter, D. J.	31-Atmos Sci

NGR 19-005-006 **Southern University - Baton Rouge** 2229
Research in the many-particle theory of nuclear systems with application to neutron star matter

Period	*Obligations*	
10/17/72-01/31/79	FY78: $18,358	TOTAL: $107,314
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Yang, C. H.	JPL/Estabrook, F. B. JPL/Zmuidzinas, J. S.	11-Astronomy

NSG 2041 **Southern University - Baton Rouge** 2230
Analytical model for the dynamic stress and deformation studies in the left ventricle

Period	*Obligations*	
08/19/74-09/01/79	FY78: $25,000	TOTAL: $99,301
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ray, G. C.	ARC/Sandler, H.	59-Life Sci, NEC

NSG 8025 **Southern University - Baton Rouge** 2231
Inhibitor analysis for a solar heating and cooling system

Period	*Obligations*	
01/02/75-08/15/78	FY78:	TOTAL: $71,572
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Tabony, J.	MSFC/Williamson, J. G. MSFC/Kent, M. I.	46-Mech Engr

NSG 8029 **Southern University - Baton Rouge** 2232
Determination of particle size using measurements of scatter

Period	*Obligations*	
10/15/75-10/14/77	FY78:	TOTAL: $39,800
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fernald, F. G.	MSFC/Trenkle, J. J. MSFC/Kent, M. I.	46-Mech Engr

NSG 8053 **Southern University - Baton Rouge** 2233
Development of a fault tolerant microprocessor based computer systems for space flight

Period	*Obligations*	
09/01/77-08/31/78	FY78:	TOTAL: $26,709
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Montgomery, V. T.	MSFC/White, J. B. MSFC/Kent, M. I.	45-Elec Engr

NSG 8056 **Southern University - Baton Rouge** 2234
Research study of determination of particle size in clouds

Period	*Obligations*	
10/15/77-10/14/78	FY78: $26,497	TOTAL: $26,497
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Scott, R. L., Jr.	MSFC/Owen, R. B. MSFC/Kent, M. I.	46-Mech Engr

NSG 9030 **Southern University - Baton Rouge** 2235
State vector update filter for autoland portion of the shuttle landing

Period	*Obligations*	
09/01/75-12/15/78	FY78: $24,940	TOTAL: $69,140
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Grewal, G. S.	JSC/Echelkamp, R. E.	45-Elec Engr

NCA 2-800801 **Tulane University** 2236
Genetic bases for thermophily: Origins of thermal stability and membrane function

Period	*Obligations*	
11/01/77-10/31/79	FY78: $7,301	TOTAL: $7,301
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Johnson, E. J.	ARC/MacElroy, R. D. ARC/Lanyi, J. K.	51-Biology

NSG 2139 **Tulane University** 2237
Localization and ultrastructural histochemical characterization of the central emetric apparatus related to motion sickness and emetric drugs in the squirrel monkey and dog

Period	*Obligations*	
03/01/76-02/28/79	FY78: $40,591	TOTAL: $110,493
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Brizzee, K. R.	ARC/Mehler, W. R.	53-Other Medical

NSG 3209 **Tulane University** 2238
Evaluation of ion textured Al2Q3 surfaces for permanent prosthetic attachment

Period	*Obligations*	
08/01/78-07/31/79	FY78: $14,995	TOTAL: $14,995
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Weinstein, A. M. Klawitter, J. J.	LERC/Weigand, A. J. LERC/Banks, B. A.	51-Biology

NSG 1460 **University of New Orleans** 2239
Enhancement of appearance potential spectroscopy data by noise removal and deconvolution

Period	*Obligations*	
10/01/77-08/31/79	FY78: $10,250	TOTAL: $10,250
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ioup, G. E.	LARC/Wood, G. M.	47-Materials Engr

NGR 19-007-004 **Xavier University - Louisiana** 2240
The correlation of the 24 hour pattern of rat plasma and adrenal corticosterone with the diurnal variations of certain tissue constituents involved in carbohydrate metabolism

Period	*Obligations*	
05/07/73-06/30/79	FY78: $15,000	TOTAL: $165,247
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ashman, P. U.	ARC/Winget, C. M. ARC/Danellis, J. V.	51-Biology

NSG 1361 **Xavier University - Louisiana** **2241**
Calculation of total cross sections for charge exchange in molecular collisions

Period	*Obligations*	
01/01/77-12/31/78	FY78:	TOTAL: $35,012
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ioup, J. W.	LARC/Wood, G. M. LARC/Smith, A.	13-Physics

NSG 8050 **Xavier University - Louisiana** **2242**
Solar radiation measurement project

Period	*Obligations*	
06/02/77-01/01/79	FY78: $24,236	TOTAL: $45,796
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ioup, J.	MSFC/Espy, P. N. MSFC/Kent, M. I.	39-Env Sci, NEC

MARYLAND

NGR 21-027-001 **Bowie State College** **2243**
Research in cosmic ray physics

Period	*Obligations*	
09/01/69-07/31/79	FY78: $30,210	TOTAL: $140,428
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Walker, R. P.	GSFC/Kniffen, D. A.	11-Astronomy

NGR 21-027-004 **Bowie State College** **2244**
Research in numerical integration

Period	*Obligations*	
05/25/71-07/31/79	FY78: $17,066	TOTAL: $94,901
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Srivastava, S.	GSFC/Lefferts, E. J.	21-Mathematics

NGR 21-027-010 **Bowie State College** **2245**
Holographic gratings for spectrographic applications study of aberrations

Period	*Obligations*	
05/14/73-07/31/79	FY78: $16,498	TOTAL: $79,377
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bhatia, M. S.	GSFC/Caruso, A. J. GSFC/Osantowski, J. F.	13-Physics

NGT 21-027-012 **Bowie State College** **2246**
Training of undergraduate students in sciences and engineering

Period	*Obligations*	
06/01/74-05/31/79	FY78: $31,749	TOTAL: $150,213
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kirksey, C. H.	HQ-LU/Pohly, J. G. GSFC/Mundy, J. R.	99-Multi-Discip

NSG 5009 **Bowie State College** **2247**
Characterization of the physico-chemical properties of polymeric materials for aerospace flights

Period	*Obligations*	
07/01/74-11/30/78	FY78:	TOTAL: $84,483
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rock, M.	GSFC/Gross, F. C. GSFC/Colony, J. A.	12-Chemistry

NSG 5051 **Coppin State College** **2248**
Research on the failure mechanism and other factors leading to reduce cycle life in aerospace nickel-cadmium cells

Period	*Obligations*	
05/01/75-04/30/79	FY78: $48,732	TOTAL: $134,315
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McDermott, P. P. Sommerfeldt, E. E.	GSFC/Ford, F. GSFC/Halpert, G.	12-Chemistry

NAS 2-9300 **Johns Hopkins University** **2249**
Study of predictive ecological models useful for the management and conservation of Bearing Sea mammals

Period	*Obligations*	
06/28/76-12/31/77	FY78:	TOTAL: $89,833
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ray, G. C. Wartzok, D. Besta, S. E.	ARC/Sebesta, P. D. ARC/Billingham, J.	59-Life Sci, NEC

NAS 5-11415 **Johns Hopkins University** **2250**
Atmosphere Explorer photoelectron and energetic particle experiment

Period	*Obligations*	
08/15/74-09/30/79	FY78: $214,550	TOTAL: $1,343,877
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Doering, J. P.	GSFC/Spencer, N. W.	31-Atmos Sci

NAS 5-23316 **Johns Hopkins University** **2251**
Design study of ultraviolet properties for large space telescope

Period	*Obligations*	
09/24/73-06/30/78	FY78:	TOTAL: $148,607
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fastie, W. G.	GSFC/Boggess, A.	11-Astronomy

NAS 5-23732 **Johns Hopkins University** **2252**
Development of a command system for a fully implantable human tissue stimulator

Period	*Obligations*	
10/26/76-03/23/79	FY78: $175,000	TOTAL: $350,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Long, D. Fishell, R. E.	GSFC/Friedman, D.S.	53-Other Medical

NAS 5-24236 **Johns Hopkins University** **2253**
Study of slit jaw camera guidance system for shuttle telescopes

Period	*Obligations*	
07/19/77-07/18/78	FY78:	TOTAL: $30,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fastie, W. G.	GSFC/Wilson, L.	11-Astronomy
Davidsen, A. F.		

NAS 6-2706 **Johns Hopkins University** **2254**
Services and materials necessary to perform theoretical studies in ocean dynamics

Period	*Obligations*	
01/16/76-02/14/78	FY78:	TOTAL: $148,101
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Phillips, O. M.	WFC/Stanley, H. R.	33-Oceanography
	WFC/Huang, N. E.	

NAS 6-2888 **Johns Hopkins University** **2255**
Study of ocean fine structures

Period	*Obligations*	
03/22/78-03/21/79	FY78: $50,043	TOTAL: $50,043
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Phillips, O. M.	WFC/Huang, N. E.	33-Oceanography
	WFC/Long, S. R.	

NAS 8-32903 **Johns Hopkins University** **2256**
Scientific investigations in support of the space telescope project

Period	*Obligations*	
02/01/78-01/31/84	FY78: $151,300	TOTAL: $151,300
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fastie, W. G.	MSFC/O'Dell, C. R.	11-Astronomy

NGR 21-001-001 **Johns Hopkins University** **2257**
Rocket and laboratory experiments and analysis on ultraviolet spectra of upper atmosphere

Period	*Obligations*	
08/01/61-09/30/79	FY78: $302,000	TOTAL: $4,565,863
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fastie, W. G.	GSFC/Bissell, E. E.	11-Astronomy
Feldman, P. D.	HQ-SC/Murphy, R.	

NGR 21-001-111 **Johns Hopkins University** **2258**
Small group performance & effects of contingency management in a programmed environment

Period	*Obligations*	
03/31/72-10/31/78	FY78: $70,539	TOTAL: $805,794
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Brady, J. V.	ARC/Patton, R. M.	62-Social Aspects

NSG 1442 **Johns Hopkins University** **2259**
Aspects of some transient faults in computer based systems

Period	*Obligations*	
09/15/77-10/14/78	FY78:	TOTAL: $47,948
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Masson, G. M.	LARC/Bavuso, S. J.	45-Elec Engr
	LARC/Lupton, A. O.	

NSG 2303 **Johns Hopkins University** **2260**
Experiments on sheared or strained turbulence

Period	*Obligations*	
02/01/78-01/31/79	FY78: $57,882	TOTAL: $57,882
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Corrsin, S.	ARC/Rubesin, M. W.	41-Aero Engr
	ARC/Marvin, J. G.	

NSG 2324 **Johns Hopkins University** **2261**
Hormonal control of blood volume

Period	*Obligations*	
04/01/78-03/31/79	FY78: $45,000	TOTAL: $45,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gann, D. S.	ARC/Danellis, J. V.	52-Clinical Med
Pirkle, J. C., Jr.		

NSG 5090 **Johns Hopkins University** **2262**
Research in earth sciences

Period	*Obligations*	
01/01/76-03/31/79	FY78: $34,993	TOTAL: $142,445
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Marsh, B. D.	GSFC/Smith, D. E.	32-Geological Sci

NSG 5161 **Johns Hopkins University** **2263**
Laboratory modelling of oceanic phenomena

Period	*Obligations*	
02/14/77-02/13/78	FY78:	TOTAL: $24,862
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Phillips, O. M.	GSFC/Mueller, J. L.	33-Oceanography

NSG 5184 **Johns Hopkins University** **2264**
Research in stellar chromospheres with the Copernicus satellite

Period	*Obligations*	
07/01/77-06/30/78	FY78:	TOTAL: $11,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Moos, H. W.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5210 **Johns Hopkins University** **2265**
Laser ranging based on maximum likelihood detection

Period	*Obligations*	
10/01/77-09/30/78	FY78: $14,000	TOTAL: $20,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Davidson, F.	GSFC/Abshire, J. B.	45-Elec Engr

NSG 5225 **Johns Hopkins University** **2266**
Systems research for remote sensing ocean surface circulation using the SEASAT-A satellite

Period	*Obligations*	
02/01/78-01/31/79	FY78: $26,652	TOTAL: $26,652
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Marsh, B. D.	GSFC/Smith, D. E.	33-Oceanography

NSG 5230 **Johns Hopkins University** **2267**
Observation of local interstellar hydrogen using Copernicus satellite

Period | *Obligations*
02/13/78-02/12/79 | FY78: $5,920 | TOTAL: $5,920

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Moos, H. W. | GSFC/Kupperian, J. E., Jr. | 11-Astronomy

NSG 5255 **Johns Hopkins University** **2268**
Ultraviolet studies of the outer planets

Period | *Obligations*
03/15/78-03/14/79 | FY78: $12,000 | TOTAL: $12,000

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Moos, H. W. | GSFC/Boggess, A.
GSFC/West, D. K. | 11-Astronomy

NSG 5269 **Johns Hopkins University** **2269**
Research of thermal regime of the upper mantle

Period | *Obligations*
04/15/78-04/14/79 | FY78: $18,821 | TOTAL: $18,821

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Marsh, B. D. | GSFC/Langel, R. A. | 32-Geological Sci
Didwall, E. M. | GSFC/Mead, G. D.

NSG 7055 **Johns Hopkins University** **2270**
Satellite data analysis

Period | *Obligations*
01/01/74-01/31/79 | FY78: | TOTAL: $234,000

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Krimigis, S. M. | HQ-ST/Kaiser, M. L.
HQ-ST/Schmerling, E. R. | 13-Physics

NSG 7382 **Johns Hopkins University** **2271**
A study of the feasibility of ultraviolet spectrometry for cometary missions

Period | *Obligations*
11/01/77-10/31/78 | FY78: $35,000 | TOTAL: $35,000

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Feldman, P. D. | HQ-SL/Donn, B. D.
HQ-SL/Brunk, W. E. | 11-Astronomy

NSG 7449 **Johns Hopkins University** **2272**
Analysis of X-ray astronomy data

Period | *Obligations*
05/15/78-05/14/79 | FY78: $60,420 | TOTAL: $60,420

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Davidsen, A. F. | HQ-SC/Opp, A. G. | 11-Astronomy

NAS 5-25120 **Montgomery College** **2273**
Ultraviolet spectra study of normal stars

Period | *Obligations*
06/21/78-09/13/78 | FY78: $8,000 | TOTAL: $8,000

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Fahey, P. P. | GSFC/Fischel, D.
GSFC/Klinglesmith, D. A. | 11-Astronomy

NAS 5-23558 **Morgan State University** **2274**
The investigation, identification, analysis and interpretation of new possibilities in transfer technology

Period | *Obligations*
06/01/76-02/01/79 | FY78: | TOTAL: $38,590

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Taylor, J. | GSFC/Friedman, D. S. | 49-Engr, NEC

NGT 21-025-006 **Morgan State University** **2275**
Summer faculty fellowship program

Period | *Obligations*
04/16/71-03/31/79 | FY78: $42,200 | TOTAL: $290,311

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Proctor, N. K. | HQ-LU/Pohly, J. G.
GSFC/Mundy, J. R. | 19-Phys Sci, NEC

NSG 5074 **Morgan State University** **2276**
Research calibration of photographic and spectrographic films

Period | *Obligations*
10/01/75-03/31/79 | FY78: $22,658 | TOTAL: $49,253

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Hammond, E. C., Jr. | GSFC/Baker, G. R.
GSFC/Stober, A. K. | 11-Astronomy

NGR 21-002-010 **University of Maryland - Baltimore** **2277**
Theoretical & experimental research in gravitational radiation

Period | *Obligations*
06/12/63-05/14/78 | FY78: $12,000 | TOTAL: $977,887

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Misner, C. W. | HQ-SC/Roman, N. G.
HQ-SC/Rosendhal, J. D. | 11-Astronomy

NSG 2098 **University of Maryland - Baltimore** **2278**
Alterations in the mammalian vestibular system associated with changes in gravitational field

Period | *Obligations*
08/01/75-11/30/78 | FY78: $26,375 | TOTAL: $93,088

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Grenell, R. G. | ARC/Sharp, J. C. | 53-Other Medical

NAS 1-15378 **University of Maryland - College Park** **2279**
Extension of water vapor lidar tests

Period | *Obligations*
05/01/78-12/15/78 | FY78: $37,444 | TOTAL: $37,444

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Wilkerson, T. D. | LARC/Browell, E. V. | 39-Env Sci, NEC

NAS 5-11063 **University of Maryland - College Park** **2280**
Experiment to analyze ions and electrons for IMP-H & J

Period | *Obligations*
06/11/68-10/31/79 | FY78: $137,959 | TOTAL: $2,015,351

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Gloeckler, G. | GSFC/Davis, M. A. | 13-Physics

NAS 5-20062 **University of Maryland - College Park** 2281
Low energy charged particles experiment for International Sun-Earth Explorer mother and heliocentric spacecraft

Period	*Obligations*	
05/02/74-07/30/80	FY78:	TOTAL: $963,861
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gloeckler, G.	GSFC/Davis, M. A.	13-Physics

NAS 5-22537 **University of Maryland - College Park** 2282
Lidar design requirements study

Period	*Obligations*	
08/08/75-12/31/77	FY78:	TOTAL: $39,686
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wilkerson, T. W.	GSFC/Aikin, A. C.	31-Atmos Sci
McIlrath, T. J.	GSFC/Spencer, N. W.	

NAS 5-22835 **University of Maryland - College Park** 2283
Workshop meetings for the electrodynamic Explorer preliminary science mission study

Period	*Obligations*	
10/16/75-04/30/77	FY78:	TOTAL: $35,289
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Messenger, C. J.	GSFC/Findlay, J. A.	31-Atmos Sci

NAS 5-23237 **University of Maryland - College Park** 2284
Feasibility study for infrared interferometer, spectrometer, & radiometer for Mariner/Jupiter 1977 launch

Period	*Obligations*	
05/09/73-10/31/81	FY78: $14,000	TOTAL: $60,900
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ponnamperuma, C. A.	GSFC/Conrath, B. J.	13-Physics
	GSFC/Hanel, R. A.	

NAS 5-23457 **University of Maryland - College Park** 2285
Study of application of a field neutron generator

Period	*Obligations*	
04/06/76-11/30/78	FY78: $7,300	TOTAL: $23,452
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sommer, S. E.	GSFC/Trombka, J. I.	39-Env Sci, NEC

NAS 5-24130 **University of Maryland - College Park** 2286
Laboratory study of resonance fluorescence in atmospheric gases

Period	*Obligations*	
04/07/77-11/17/78	FY78: $130,103	TOTAL: $225,103
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McIlrath, T. J.	GSFC/Aikin, A. C.	31-Atmos Sci

NAS 5-24305 **University of Maryland - College Park** 2287
Intensified charge coupled device imager study

Period	*Obligations*	
09/14/77-04/15/78	FY78:	TOTAL: $39,410
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Currie, D. G.	GSFC/Kelsall, T.	45-Elec Engr

NAS 5-24407 **University of Maryland - College Park** 2288
Study of major architectural design issues associated with the development of a mission oriented distributed computing system

Period	*Obligations*	
12/19/77-12/18/78	FY78: $65,115	TOTAL: $65,115
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Agrawala, A. K.	GSFC/Barsky, J.	22-Computer Science
Gligor, V. D.	GSFC/Larsen, R. L.	

NAS 5-25132 **University of Maryland - College Park** 2289
Investigations of diagnostic techniques applicable to pulsed visible dye lasers

Period	*Obligations*	
08/01/78-05/15/79	FY78: $19,644	TOTAL: $19,644
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McIlrath, T. J.	GSFC/Caudill, L. O.	49-Engr, NEC
	GSFC/Degnan, J. J.	

NAS 8-32148 **University of Maryland - College Park** 2290
A study to determine the aquatic biological effects on the solid rocket booster

Period	*Obligations*	
08/10/76-12/15/78	FY78: $60,000	TOTAL: $103,041
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Colwell, R. R.	MSFC/Scott, F. E.	51-Biology
Zachary, A.		

NCA 5-11 **University of Maryland - College Park** 2291
Develop and test a very efficient two dimensional fast Fourier transform algorithm

Period	*Obligations*	
08/15/75-09/15/76	FY78:	TOTAL: $7,432
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Harger, R. O.	GSFC/Fischel, D.	11-Astronomy
	GSFC/Klinglesmith, D. A.	

NCA 5-13 **University of Maryland - College Park** 2292
Study of digital image processing of astronomical scenes

Period	*Obligations*	
05/17/76-05/15/77	FY78:	TOTAL: $15,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rosenfeld, A.	GSFC/Klinglesmith, D. A.	31-Atmos Sci

NCA 5-20 **University of Maryland - College Park** 2293
Study of digital image processing of astronomical scenes

Period	*Obligations*	
05/16/77-05/15/78	FY78:	TOTAL: $15,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rosenfeld, A.	GSFC/Fischel, D.	11-Astronomy
	GSFC/Klinglesmith, D. A.	

NCA 5-22 **University of Maryland - College Park** **2294**
Analysis of orbital and celestial environment display information

Period | *Obligations*
07/01/77-12/31/77 | FY78: | TOTAL: $10,000
Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Rosenfeld, A. | GSFC/Slade, W.
GSFC/Hennessy, J. | 11-Astronomy

NCA 5-24 **University of Maryland - College Park** **2295**
Physics study of planetary nebulae

Period | *Obligations*
10/01/77-09/30/78 | FY78: $2,800 | TOTAL: $2,800
Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Currie, D. G. | GSFC/Hobbs, R. W. | 11-Astronomy

NCA 5-26 **University of Maryland - College Park** **2296**
Study of digital image processing of astronomical scenes

Period | *Obligations*
05/16/78-05/15/79 | FY78: $5,700 | TOTAL: $5,700
Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Rosenfeld, A. | GSFC/Klinglesmith, D. A. | 11-Astronomy

NCA 5-27 **University of Maryland - College Park** **2297**
Development of software for spectral image processing

Period | *Obligations*
03/01/78-03/31/78 | FY78: $1,752 | TOTAL: $1,752
Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Rosenfeld, A. | GSFC/Klinglesmith, D. A. | 11-Astronomy

NCA 5-28 **University of Maryland - College Park** **2298**
Goddard introduction to engineering careers

Period | *Obligations*
06/01/78-06/30/79 | FY78: $8,380 | TOTAL: $8,380
Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Wockenfuss, W. A. | GSFC/Chapman, J. W. | 49-Engr, NEC

NCA 5-79 **University of Maryland - College Park** **2299**
Analysis of high energy X-ray spectrometer data

Period | *Obligations*
12/01/77-12/31/78 | FY78: $7,200 | TOTAL: $7,200
Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Rosenfeld, A. | GSFC/Dennis, B. R. | 31-Atmos Sci

NGL 21-002-005 **University of Maryland - College Park** **2300**
Theoretical research on dynamics of astrophysical plasmas including studies of structure of plasma shock waves in solar corona and their possible radio emission

Period | *Obligations*
02/01/62-06/30/80 | FY78: $65,000 | TOTAL: $980,493
Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Wu, C. S. | HQ-ST/King, J. H.
HQ-ST/Schmerling, E. R. | 19-Phys Sci, NEC

NGL 21-002-033 **University of Maryland - College Park** **2301**
Theoretical and experimental studies in space sciences, including consideration of rocket probe and satellites techniques

Period | *Obligations*
06/02/64-07/31/80 | FY78: $67,636 | TOTAL: $3,140,884
Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Smith, E. P.
Kerr, F. J. | GSFC/Bauer, S. J. | 31-Atmos Sci

NGR 21-002-002 **University of Maryland - College Park** **2302**
Theoretical studies in atmospheric and space physics

Period | *Obligations*
02/01/60-11/30/77 | FY78: $28,000 | TOTAL: $715,000
Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Opik, E. J. | HQ-SL/Donn, B. D. | 11-Astronomy

NGR 21-002-066 **University of Maryland - College Park** **2303**
A study of primary cosmic ray electrons, utilizing balloon-borne experiments

Period | *Obligations*
11/19/65-05/31/79 | FY78: | TOTAL: $795,000
Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Earl, J. A. | HQ-SC/Opp, A. G. | 11-Astronomy

NGR 21-002-073 **University of Maryland - College Park** **2304**
Experimental and theoretical investigation of plasma radiation

Period | *Obligations*
04/26/66-02/28/79 | FY78: $59,999 | TOTAL: $816,173
Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Griem, H. R. | HQ-SC/Rosendhal, J. D.
HQ-SC/Roman, N. G. | 11-Astronomy

NGR 21-002-096 **University of Maryland - College Park** **2305**
Research in atmospheric physics

Period | *Obligations*
06/21/66-03/31/79 | FY78: $76,242 | TOTAL: $823,884
Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Matthews, D. L. | GSFC/Hartle, R. E.
GSFC/Gagnon, B. D. | 31-Atmos Sci

NGR 21-002-199 **University of Maryland - College Park** **2306**
Research in solar radio astronomy at short wavelengths

Period | *Obligations*
04/11/69-09/30/78 | FY78: $60,000 | TOTAL: $343,656
Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Kundu, M. R. | HQ-ST/Bohlin, J. D. | 13-Physics

NGR 21-002-224 **University of Maryland - College Park** **2307**
Research on the measurement of the charge and isotopic composition on the primary cosmic rays

Period | *Obligations*
07/31/69-02/28/79 | FY78: $50,000 | TOTAL: $318,000
Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Gloeckler, G. | HQ-SC/Opp, A. G.
HQ-SC/Fishman, G. J. | 11-Astronomy

NGR 21-002-270 University of Maryland - College Park 2308
Research in mechanical theorem proving

Period	Obligations	
05/18/70-03/31/79	FY78: $33,366	TOTAL: $176,661
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Minker, J.	HQ-RE/Gevarter, W. B.	21-Mathematics
	JPL/Friedman, L.	

NGR 21-002-291 University of Maryland - College Park 2309
Studies of charged particles in natural and laboratory environments

Period	Obligations	
01/28/71-10/31/79	FY78: $55,460	TOTAL: $256,921
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Coplan, M. A.	GSFC/Ogilvie, K. W.	13-Physics
Rosenberg, T. J.	GSFC/Hoffman, R. A.	

NGR 21-002-316 University of Maryland - College Park 2310
Research program in charged particle detector technology

Period	Obligations	
07/01/71-01/31/79	FY78: $466,000	TOTAL: $2,085,717
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gloeckler, G.	GSFC/Teegarden, B. J.	13-Physics

NGR 21-002-317 University of Maryland - College Park 2311
Chemical studies of the origin of life

Period	Obligations	
08/18/71-06/30/79	FY78:	TOTAL: $665,093
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ponnamperuma, C. A.	HQ-SB/Young, R. S.	12-Chemistry

NGR 21-002-344 University of Maryland - College Park 2312
Studies on thermophysical properties in critical region of fluids

Period	Obligations	
02/16/72-02/28/79	FY78: $15,231	TOTAL: $82,230
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sengers, J. V.	LERC/Simoneau, R. J.	13-Physics

NGR 21-002-368 University of Maryland - College Park 2313
Geochemistry of lunar & meteoritic materials

Period	Obligations	
06/01/72-08/15/78	FY78:	TOTAL: $330,355
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Khanna, R. H.	GSFC/Stief, L. J.	32-Geological Sci

NGR 21-002-399 University of Maryland - College Park 2314
Urbanization and geologic processes in the Chesapeake Bay watershed

Period	Obligations	
03/01/73-05/31/79	FY78: $15,200	TOTAL: $108,511
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McCuen, R. H.	GSFC/Rango, A.	32-Geological Sci
	GSFC/Salomonson, V. V.	

NGR 21-002-400 University of Maryland - College Park 2315
Preliminary experiments with a split sphere high pressure apparatus

Period	Obligations	
04/17/73-10/01/78	FY78: $67,150	TOTAL: $281,791
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Spain, I. L.	LERC/Coles, W. D.	13-Physics
Skelton, E. F.	LERC/Brown, G. V.	

NGT 21-002-254 University of Maryland - College Park 2316
Summer faculty fellowship program in research for 24 faculty members

Period	Obligations	
12/23/69-03/31/78	FY78:	TOTAL: $643,368
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Emad, F. P.	HQ-LU/Carter, C. H.	49-Engr, NEC

NSG 1336 University of Maryland - College Park 2317
Water vapor lidar demonstration

Period	Obligations	
09/20/76-11/19/77	FY78:	TOTAL: $10,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wilkerson, T. D.	LARC/Browell, E. V.	31-Atmos Sci
McIlrath, T. J.		

NSG 1468 University of Maryland - College Park 2318
Study of surface acoustic wave charge transfer device

Period	Obligations	
11/15/77-11/14/78	FY78: $27,819	TOTAL: $27,819
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lin, H. C.	LARC/Benz, H. F.	45-Elec Engr
	LARC/Husson, C.	

NSG 1558 University of Maryland - College Park 2319
Design of flight control systems via robust servomechanism theory

Period	Obligations	
08/15/78-08/14/79	FY78: $30,127	TOTAL: $30,127
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wang, S. H.	LARC/Schy, A. A.	45-Elec Engr

NSG 5017 University of Maryland - College Park 2320
Resource identification studies on urban watersheds using the Anacostia River Basin as an example

Period	Obligations	
07/15/74-11/30/78	FY78: $27,687	TOTAL: $91,254
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ragan, R. M.	GSFC/Salomonson, V. V.	
McCuen, R. H.	GSFC/Rango, A.	32-Geological Sci

NSG 5035 University of Maryland - College Park 2321
Astronomy and geophysics experiment using very long base interferometry

Period	Obligations	
12/01/74-03/31/78	FY78:	TOTAL: $63,650
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Richard, J. P.	GSFC/Clark, T. A.	11-Astronomy

NSG 5042 **University of Maryland - College Park** **2322**
Study of CO2 waveguide laser life problem

Period *Obligations*
01/12/75-12/31/78 FY78: TOTAL: $120,685

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Hochuli, U. E. GSFC/Degnan, J. J. 49-Engr, NEC
Davis, C.

NSG 5048 **University of Maryland - College Park** **2323**
Efficient detection, analysis and classification of lightning radiation fields

Period *Obligations*
02/01/75-12/31/77 FY78: TOTAL: $28,432

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Harger, R. O. GSFC/Levine, D. M. 45-Elec Engr
Tretter, S. A.

NSG 5083 **University of Maryland - College Park** **2324**
Multiphase flows for lunar and terrestrial volcanoes

Period *Obligations*
10/01/75-09/30/77 FY78: TOTAL: $18,767

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Pai, S. I. GSFC/O'Keefe, J. A. 19-Phys Sci, NEC

NSG 5084 **University of Maryland - College Park** **2325**
Investigations with satellite data

Period *Obligations*
10/01/75-10/31/77 FY78: TOTAL: $109,847

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Thompson, O. E. GSFC/Theon, J. S. 31-Atmos Sci
Fritz, S. GSFC/Arking, A.

NSG 5094 **University of Maryland - College Park** **2326**
Analysis of lunar data

Period *Obligations*
02/01/76-03/31/79 FY78: TOTAL: $139,004

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Balakrishnan, A. V. GSFC/Trombka, J. I. 32-Geological Sci

NSG 5112 **University of Maryland - College Park** **2327**
Magnetogeochemistry of solid solar systems bodies

Period *Obligations*
05/01/76-08/31/77 FY78: TOTAL: $24,150

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Weidner, J. R. GSFC/Wasilewski, P. J. 19-Phys Sci, NEC

NSG 5121 **University of Maryland - College Park** **2328**
Geochemistry of lunar materials

Period *Obligations*
07/01/76-09/30/77 FY78: $50 TOTAL: $79,111

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Weidner, J. R. GSFC/Nava, D. F. 32-Geological Sci
GSFC/Philpotts, J. A.

NSG 5123 **University of Maryland - College Park** **2329**
Evaluation of software engineering disciplines

Period *Obligations*
08/01/76-12/31/78 FY78: $61,023 TOTAL: $127,214

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Basili, V. R. GSFC/McGarry, F. E. 49-Engr, NEC
Zelkowitz, M. V. GSFC/Tasaki, K. K.

NSG 5129 **University of Maryland - College Park** **2330**
Research regarding centimeter laser ranging accuracy to earth satellites

Period *Obligations*
09/17/76-11/30/77 FY78: TOTAL: $169,070

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Alley, C. O. GSFC/Johnson, T. S. 13-Physics
Currie, D. G.

NSG 5137 **University of Maryland - College Park** **2331**
Incorporation of remotely sensed soil moisture data into hydrologic models

Period *Obligations*
12/01/76-06/30/79 FY78: $35,950 TOTAL: $72,055

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Witczak, M. W. GSFC/Schmugge, T. J. 32-Geological Sci

NSG 5172 **University of Maryland - College Park** **2332**
Raman spectroscopy of cosmic ices and planetary atmospheres

Period *Obligations*
04/01/77-06/30/79 FY78: $9,176 TOTAL: $22,566

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Khanna, R. J. GSFC/Donn, B. D. 12-Chemistry

NSG 5174 **University of Maryland - College Park** **2333**
Atmospheric lidar research

Period *Obligations*
06/01/77-05/31/78 FY78: TOTAL: $20,000

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Wilkerson, T. D. GSFC/Barnes, W. L. 31-Atmos Sci

NSG 5177 **University of Maryland - College Park** **2334**
Measurement of interstellar helium impinging on the earth

Period *Obligations*
06/01/77-12/31/78 FY78: $20,000 TOTAL: $35,000

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Moore, J. H. GSFC/Bissell, E. E. 13-Physics
Opal, C. B. HQ-ST/Schmerling, E. R.
Meier, R. R.

NSG 5209 **University of Maryland - College Park** **2335**
Multidisciplinary research program in atmospheric science

Period *Obligations*
09/12/77-11/30/78 FY78: $247,834 TOTAL: $293,834

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Thompson, O. E. GSFC/Arking, A. 31-Atmos Sci

NSG 5234 **University of Maryland - College Park** **2336**
Research of image motion and evaluation and optimization of the automatic guide system on the forty-eight inch telescope

Period	*Obligations*	
02/19/78-02/18/79	FY78: $40,000	TOTAL: $40,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Currie, D. G.	GSFC/Winston, G. C.	31-Atmos Sci

NSG 5287 **University of Maryland - College Park** **2337**
Evaluate the automatic guider system for possible space ranging applications

Period	*Obligations*	
07/15/78-07/14/79	FY78: $37,404	TOTAL: $37,404
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Currie, D. G.	GSFC/Winston, G. C.	31-Atmos Sci

NSG 5298 **University of Maryland - College Park** **2338**
Solar gamma-ray astronomy research

Period	*Obligations*	
08/15/78-05/14/79	FY78: $19,900	TOTAL: $19,900
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wall, N. S.	GSFC/Ramaty, R.	11-Astronomy

NSG 6010 **University of Maryland - College Park** **2339**
An in-depth investigation to assess and quantify the economic implications of management oriented remote sensing activities

Period	*Obligations*	
05/01/76-04/30/77	FY78:	TOTAL: $29,602
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Harmon, D. M. Fuller, K. B.	WFC/Alfonsi, P. J.	72-Economics

NSG 7046 **University of Maryland - College Park** **2340**
Studies of the Apollo 15 and 16 orbital X-ray data

Period	*Obligations*	
05/01/74-03/31/79	FY78: $31,552	TOTAL: $128,708
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Adler, I.	HQ-SL/Quaide, W. L. HQ-SL/French, B. E.	32-Geological Sci

NSG 7196 **University of Maryland - College Park** **2341**
Research and development of gravitational experiments for spacecraft

Period	*Obligations*	
03/01/76-06/30/79	FY78: $73,267	TOTAL: $173,513
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Weber, J. Richard, J. P.	HQ-RR/Lundholm, J. G., Jr. JPL/Mason, P. V.	13-Physics

NSG 7252 **University of Maryland - College Park** **2342**
Analysis and interpretation of X-ray data

Period	*Obligations*	
06/01/76-05/31/78	FY78:	TOTAL: $35,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rose, W. K.	HQ-SC/Opp, A. G.	11-Astronomy

NSG 7253 **University of Maryland - College Park** **2343**
Improving communications between humans and computer-directed automatic systems

Period	*Obligations*	
07/01/76-06/30/79	FY78: $45,547	TOTAL: $120,925
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Reiger, C. J. Minker, J.	HQ-RR/Randolph, L. P. JPL/Friedman, L.	22-Computer Science

NSG 7260 **University of Maryland - College Park** **2344**
Colloquium on comparative planetology

Period	*Obligations*	
06/15/76-06/14/77	FY78:	TOTAL: $10,988
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ponnamperuma, C. A.	HQ-SL/Williams, R. J. HQ-SL/Flinn, E. A.	32-Geological Sci

NSG 7284 **University of Maryland - College Park** **2345**
Research on photon counting array photometer for space applications

Period	*Obligations*	
10/01/76-11/30/77	FY78:	TOTAL: $147,768
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Currie, D. G.	HQ-SC/Rosendhal, J. D.	11-Astronomy

NSG 7285 **University of Maryland - College Park** **2346**
A study of solar X-ray bursts

Period	*Obligations*	
09/15/76-09/14/77	FY78:	TOTAL: $9,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kundu, M. R.	HQ-ST/Timothy, A. F.	13-Physics

NSG 7322 **University of Maryland - College Park** **2347**
Research on comets

Period	*Obligations*	
03/01/77-02/28/79	FY78: $38,000	TOTAL: $76,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
A'Hearn, M. F.	HQ-SL/Brunk, W. E. HQ-SL/Quaide, W. L.	11-Astronomy

NSG 7340 **University of Maryland - College Park** **2348**
Spectral studies related to dissociation of hydrogen-bromine, hydrogen-chloride and bromine-oxide

Period	*Obligations*	
06/16/77-06/15/79	FY78: $36,000	TOTAL: $65,783
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ginter, M. L.	HQ-ST/Tilford, S. G. HQ-ST/Newton, G. P.	13-Physics

NSG 7365 **University of Maryland - College Park** **2349**
Theoretical calculations of non-ballistic fluid dynamic flow for ejecta transport in models of multiring basins of impact origin

Period	*Obligations*	
07/01/77-06/30/79	FY78:	TOTAL: $30,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Pai, S. I.	HQ-SL/Quaide, W. L. HQ-SL/French, B. M.	32-Geological Sci

MARYLAND (Continued)

NSG 7427 **University of Maryland - College Park** **2350**
Numerical simulation experiments in support of NASA solar physics missions: Solar loop and flare studies

Period	*Obligations*	
12/01/77-11/30/78	FY78: $60,000	TOTAL: $60,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Spicer, D. S.	HQ-ST/Bohlin, J. D.	13-Physics

NAS 6-2855 **University of Maryland - Eastern Shore** **2351**
Services for operation of Wallops' Technical Library

Period	*Obligations*	
10/01/77-09/30/78	FY78: $62,375	TOTAL: $62,375
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Smith, J. C.	WFC/Floyd, J. C.	99-Multi-Discip
Ignasias, C. D.	WFC/Foster, J. N.	

NGR 21-119-003 **University of Maryland - Eastern Shore** **2352**
High power pulsed laser beams and their atmospheric propagation limitations

Period	*Obligations*	
08/18/72-12/31/78	FY78:	TOTAL: $46,254
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Singh, G.	WFC/Trafford, G. H.	13-Physics

NSG 6006 **University of Maryland - Eastern Shore** **2353**
Studies of microwave radiation as a tool in soil sterilization against major diseases and pests of agricultural crops

Period	*Obligations*	
03/01/76-05/31/79	FY78: $35,000	TOTAL: $99,699
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wutoh, J. G.	WFC/Oberholtzer, J. D.	99-Multi-Discip

NSG 6016 **University of Maryland - Eastern Shore** **2354**
A chronology and retrieval system for Wallops Flight Center atmospheric data

Period	*Obligations*	
09/17/76-10/16/78	FY78: $30,222	TOTAL: $55,706
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Smith, J. C.	WFC/Parsons, C. L.	31-Atmos Sci

NSG 6017 **University of Maryland - Eastern Shore** **2355**
Summer study on space colonies

Period	*Obligations*	
06/20/77-05/31/78	FY78:	TOTAL: $5,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lynk, W. L.	WFC/Trafford, G. H.	59-Life Sci, NEC

NSG 7470 **University of Maryland - Eastern Shore** **2356**
Optimization of agricultural productivity in closed ecological life support systems

Period	*Obligations*	
07/01/78-12/31/79	FY78: $40,000	TOTAL: $40,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Joshi, J. M.	HQ-SB/Young, R. S.	51-Biology

MASSACHUSETTS

NSG 7325 **Amherst College** **2357**
Factors affecting assimilatory nitrate reduction by prokaryotes

Period	*Obligations*	
06/01/77-05/31/78	FY78:	TOTAL: $34,810
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Leadbetter, E. R.	HQ-SB/Young, R. S.	51-Biology

NSG 7190 **Boston College** **2358**
Coordinated analysis of auroral data and particles data from ATS-5 and ATS-6

Period	*Obligations*	
12/01/75-08/31/77	FY78:	TOTAL: $30,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Eather, R. H.	HQ-ST/Cauffman, D. P.	13-Physics

NSG 7385 **Boston College** **2359**
Investigation of auroral process on the ATS field line

Period	*Obligations*	
09/01/77-08/31/78	FY78: $30,000	TOTAL: $30,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Eather, R. H.	HQ-ST/Taylor, W. W.	39-Env Sci, NEC
	HQ-ST/Schmerling, E. R.	

NSG 7468 **Boston College** **2360**
Evaluate and assess the role of theorists in solar terrestrial research

Period	*Obligations*	
06/01/78-05/31/79	FY78: $66,442	TOTAL: $66,442
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Carovillano, R. L.	HQ-ST/Tomayko, D. W.	39-Env Sci, NEC

NAS 8-32844 **Boston University** **2361**
Use of the space shuttle to create plasma holes for ionospheric and radio astronomical studies

Period	*Obligations*	
10/01/77-09/03/81	FY78: $21,000	TOTAL: $21,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mendillo, M.	MSFC/Guynes, B. V.	31-Atmos Sci
	MSFC/Ise, R.	

NGR 22-004-018 **Boston University** **2362**
Ultrasonic measurement of heart volume

Period	*Obligations*	
03/01/70-12/31/78	FY78:	TOTAL: $65,511
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fulton, G. P.	HQ-SB/Larson, C. A.	59-Life Sci, NEC
Berman, H. J.		

NGR 22-004-025 **Boston University** 2363
Microbial contributions to the precambrian earth

Period	*Obligations*	
12/15/70-09/30/78	FY78: $48,226	TOTAL: $210,663
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Margulis, L.	HQ-SB/Young, R. S.	32-Geological Sci

NGR 22-004-030 **Boston University** 2364
Compressible unsteady potential aerodynamic flow around lifting bodies having arbitrary shapes & motions

Period	*Obligations*	
12/08/71-12/31/78	FY78: $80,358	TOTAL: $424,472
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Morino, L.	LARC/Yates, E. C., Jr.	41-Aero Engr
Tseng, K.		

NSG 7254 **Boston University** 2365
The creation of plasma holes in the ionosphere and their potential use

Period	*Obligations*	
09/01/76-08/31/77	FY78:	TOTAL: $10,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mendillo, M.	HQ-ST/Taylor, W. W.	19-Phys Sci, NEC
	HQ-ST/Schmerling, E. R.	

NAS 9-15147 **Brandeis University** 2366
Vestibular selection criteria development

Period	*Obligations*	
09/01/76-02/28/79	FY78: $38,500	TOTAL: $96,743
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lackner, J. R.	JSC/Homick, J. L.	59-Life Sci, NEC

NAS 1-10492 **Harvard University** 2367
Participation in science planning for Viking 1975 missions in area of entry science

Period	*Obligations*	
03/25/71-06/14/78	FY78: $72,714	TOTAL: $327,921
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McElroy, M. B.	LARC/Williams, T. S., Jr.	31-Atmos Sci
	LARC/Glenny, W. R.	

NAS 2-9127 **Harvard University** 2368
Interdisciplinary scientist, Pioneer/Venus program

Period	*Obligations*	
02/23/76-12/31/79	FY78: $56,000	TOTAL: $117,196
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Goody, R. M.	ARC/Hall, C. F.	11-Astronomy
	ARC/Porter, D. L.	

NAS 5-3949 **Harvard University** 2369
Study and experiment for a high resolution ultraviolet telescope and spectrometer system

Period	*Obligations*	
01/28/65-06/30/79	FY78: $396,500	TOTAL: $39,274,986
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Noyes, R. W.	MSFC/Snoddy, W. C.	11-Astronomy

NAS 5-23199 **Harvard University** 2370
Atmosphere Explorer theoretical investigations

Period	*Obligations*	
03/19/73-09/19/77	FY78:	TOTAL: $164,564
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McElroy, M. B.	GSFC/Spencer, C. W.	31-Atmos Sci

NAS 5-23494 **Harvard University** 2371
X-ray ultraviolet spectroheliometer experiment for synchronous meteorological satellite study effort

Period	*Obligations*	
05/19/76-09/30/81	FY78: $1,297,000	TOTAL: $4,295,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Reeves, E. M.	GSFC/Donley, J. T.	31-Atmos Sci

NAS 5-24134 **Harvard University** 2372
Investigation of the upper atmosphere using data from AE satellites

Period	*Obligations*	
09/19/77-09/30/79	FY78: $67,428	TOTAL: $123,864
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McElroy, M. B.	GSFC/Spencer, N. W.	31-Atmos Sci

NAS 8-31374 **Harvard University** 2373
Scientific data reduction and analysis activities ATM experiment S-054

Period	*Obligations*	
01/01/75-10/31/79	FY78: $161,625	TOTAL: $973,588
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Vaiana, G. S.	MSFC/Snoddy, W. C.	13-Physics

NAS 8-31549 **Harvard University** 2374
Development of a microchannel plate detector

Period	*Obligations*	
09/04/75-03/31/78	FY78: $34,972	TOTAL: $502,724
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Noyes, R. W.	MSFC/Bordelon, C. S.	13-Physics
	MSFC/Huggins, C. T.	

NAS 8-32691 **Harvard University** 2375
Crystal nucleation in glass-forming alloy and pure metal melts under containerless and vibrationless conditions

Period	*Obligations*	
06/23/78-06/22/81	FY78: $40,000	TOTAL: $40,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Turnbull, D.	MSFC/Lacy, L. L.	13-Physics
Spaepen, F.	MSFC/Thomas, P. E.	

NAS 9-15326 **Harvard University** 2376
Preliminary characterization of persisting circadian rhythms during space flight: Neurospora as a model system

Period	*Obligations*	
06/01/77-04/30/81	FY78: $82,606	TOTAL: $99,316
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Newton, R. W.	JSC/Nolte, R. W.	51-Biology

NASW 2952 **Harvard University** **2377**
An atmospheric and oceanic nitrous oxide measurement program

Period	*Obligations*	
06/15/76-04/15/78	FY78:	TOTAL: $122,300
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McElroy, M. B.	HQ-ST/King, J.	33-Oceanography

NGL 22-007-006 **Harvard University** **2378**
Theoretical & experimental studies on ultraviolet solar physics

Period	*Obligations*	
07/10/63-12/31/78	FY78: $200,000	TOTAL: $4,721,398
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Parkinson, W. H.	HQ-ST/Bohlin, J. D.	13-Physics

NGL 22-007-069 **Harvard University** **2379**
Infrared absorption spectrophotometry of organic extractives from precambrian sediments

Period	*Obligations*	
05/29/66-05/31/78	FY78:	TOTAL: $332,743
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Barghoorn, E. S.	HQ-SB/Young, R. S.	32-Geological Sci

NGL 22-007-117 **Harvard University** **2380**
Investigation of the behavior of ultrashort light pulses of picosecond duration in optical media

Period	*Obligations*	
04/22/68-01/31/78	FY78:	TOTAL: $300,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bloembergen, N.	GSFC/McAvoy, N.	13-Physics

NGL 22-007-228 **Harvard University** **2381**
Theoretical investigation of multiphase in Jupiter interior and possible relationship to behavior of outer atmospheric layers

Period	*Obligations*	
12/15/71-09/30/80	FY78: $188,000	TOTAL: $583,987
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Goody, R. M.	HQ-SL/Murphy, R. E. HQ-SL/Brunk, W. E.	31-Atmos Sci

NGL 22-007-247 **Harvard University** **2382**
Lunar sample analysis

Period	*Obligations*	
06/30/72-01/31/81	FY78: $144,113	TOTAL: $641,268
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hays, J. F.	JSC/Harris, J. W.	12-Chemistry

NGR 22-007-202 **Harvard University** **2383**
Investigations in the far ultraviolet solar spectrum

Period	*Obligations*	
11/05/70-09/30/79	FY78: $76,000	TOTAL: $1,044,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Parkinson, W. H.	HQ-ST/Bohlin, J. D.	11-Astronomy

NGR 22-007-269 **Harvard University** **2384**
Theoretical research in planetary physics

Period	*Obligations*	
09/01/73-09/30/78	FY78: $56,589	TOTAL: $208,197
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cameron, A. G.	HQ-SL/Dwornik, S. E. HQ-SL/Boyce, J. M.	32-Geological Sci

NGR 22-007-270 **Harvard University** **2385**
The operation of a balloon-borne 40-inch telescope for far infrared astronomy

Period	*Obligations*	
11/05/73-12/30/78	FY78: $116,000	TOTAL: $435,868
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fazio, G. G. Noyes, R. W.	HQ-SC/Boggess, N. W. HQ-SC/Roman, N. G.	11-Astronomy

NGR 22-007-272 **Harvard University** **2386**
Theoretical studies in space astronomy

Period	*Obligations*	
09/01/73-08/31/78	FY78:	TOTAL: $175,696
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cameron, A. G.	HQ-SC/Opp, A. G.	11-Astronomy

NSG 2031 **Harvard University** **2387**
Chemistry and dynamics of trace stratospheric gases

Period	*Obligations*	
07/01/74-09/30/78	FY78: $91,976	TOTAL: $304,341
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McElroy, M. B. Wolfsy, S. C.	HQ-ST/Simon, N. K. HQ-ST/Tilford, S. G.	31-Atmos Sci

NSG 2144 **Harvard University** **2388**
Regulation of protein balance in muscle

Period	*Obligations*	
04/01/76-05/01/79	FY78: $17,206	TOTAL: $74,664
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Goldberg, A. L.	ARC/Ellis, S. E.	51-Biology

NSG 2265 **Harvard University** **2389**
Geometrical methods for nonlinear dynamics

Period	*Obligations*	
09/01/77-08/31/79	FY78: $31,500	TOTAL: $50,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Brockett, R. W. Byrnes, C. I.	ARC/Doolin, B. F.	41-Aero Engr

NSG 5128 **Harvard University** **2390**
Lyman alpha coronograph research sounding rocket program

Period	*Obligations*	
07/15/76-10/14/79	FY78: $285,000	TOTAL: $624,926
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Reeves, E. M.	HQ-ST/Bohlin, J. D. GSFC/Bissell, E. E.	13-Physics

NSG 5143 **Harvard University** **2391**
Ultraviolet study of V Puggis
Period *Obligations*
12/01/76-08/31/78 FY78: TOTAL: $995
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Flannery, B. P. GSFC/Kupperian, J. E., Jr. 11-Astronomy

NSG 5160 **Harvard University** **2392**
Climate processes in the atmosphere and ocean
Period *Obligations*
02/14/77-01/31/79 FY78: $30,000 TOTAL: $89,532
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Lindzen, R. S. GSFC/Halem, M. 31-Atmos Sci
Sarachik, E. S.

NSG 5176 **Harvard University** **2393**
Research of high resolution vacuum ultraviolet absorption cross-sections of stratospheric molecules
Period *Obligations*
06/01/77-05/31/79 FY78: $50,000 TOTAL: $97,600
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Parkinson, W. H. GSFC/Reed, E. I. 13-Physics
Freeman, D. E.
Yoshino, K.

NSG 5191 **Harvard University** **2394**
Studies of chromospheres and corona of late-type stars/ reobservation of Alpha Aurigae
Period *Obligations*
08/01/77-07/31/78 FY78: TOTAL: $15,158
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Dupree, A. K. GSFC/Kupperian, J. E., Jr. 11-Astronomy

NSG 5226 **Harvard University** **2395**
Studies of selected soft X-ray sources
Period *Obligations*
02/01/78-01/31/79 FY78: $9,215 TOTAL: $9,215
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Dupree, A. K. GSFC/Kupperian, J. E., Jr. 11-Astronomy

NSG 5228 **Harvard University** **2396**
Dynamics and evaluation of Gulf Stream meanders
Period *Obligations*
02/01/78-09/30/79 FY78: $19,105 TOTAL: $19,105
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Robinson, A. R. GSFC/Halem, M. 33-Oceanography

NSG 5229 **Harvard University** **2397**
Ultraviolet investigations of stellar X-ray sources
Period *Obligations*
02/01/78-01/31/79 FY78: $39,885 TOTAL: $39,885
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Dupree, A. K. GSFC/Boggess, A. 11-Astronomy
GSFC/West, D. K.

NSG 5239 **Harvard University** **2398**
Observations of stellar chromospheres and coronae
Period *Obligations*
03/01/78-02/28/79 FY78: $21,500 TOTAL: $21,500
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Dupree, A. K. GSFC/Boggess, A. 11-Astronomy
GSFC/West, D. K.

NSG 5293 **Harvard University** **2399**
Studies of the local interstellar medium
Period *Obligations*
08/01/78-07/31/79 FY78: $15,000 TOTAL: $15,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Dupree, A. K. GSFC/Kupperian, J. E., Jr. 11-Astronomy

NSG 7095 **Harvard University** **2400**
Reflection spectra of sodium doped ammonia ice
Period *Obligations*
10/25/74-08/31/78 FY78: $35,017 TOTAL: $155,730
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Dennison, B. K. HQ-SL/Donn, B. D. 31-Atmos Sci
HQ-SL/Brunk, W. E.

NSG 7176 **Harvard University** **2401**
Participation in NASA core funding
Period *Obligations*
11/01/75-10/31/80 FY78: $400,000 TOTAL: $800,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Field, G. B. HQ-LU/Carter, C. H. 11-Astronomy
McElroy, M. B.

NSG 7304 **Harvard University** **2402**
Absolute transition probabilities in ultraviolet spectra of interstellar molecules
Period *Obligations*
12/15/76-12/14/78 FY78: $40,715 TOTAL: $73,525
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Parkinson, W. H. HQ-SC/Rosendahl, J. 31-Atmos Sci

NSG 7332 **Harvard University** **2403**
Planetary speckle imaging
Period *Obligations*
03/01/77-12/31/78 FY78: $67,000 TOTAL: $121,366
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Goody, R. M. HQ-SL/Brunk, W. E. 11-Astronomy
HQ-SL/Quaide, W. L.

NSG 7391 **Harvard University** **2404**
Experimental solar radio spectrum analyzer
Period *Obligations*
10/15/77-10/14/78 FY78: $8,000 TOTAL: $8,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Maxwell, A. HQ-ST/Bohlin, J. D. 13-Physics
HQ-ST/Timothy, A. F.

NSG 7398 **Harvard University** **2405**
Martian dust storms

Period | *Obligations*
07/01/77-06/30/78 | FY78: $32,829 | TOTAL: $32,829

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Goody, R. M. | HQ-SL/Dwornik, S. E. | 32-Geological Sci
HQ-SL/Boyce, J. M.

NSG 7461 **Harvard University** **2406**
Computer assisted performance tests of the Lyman-alpha coronograph

Period | *Obligations*
07/01/78-06/30/79 | FY78: $20,000 | TOTAL: $20,000

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Parkinson, W. H. | HQ-ST/Bohlin, J. D. | 11-Astronomy

NSG 9054 **Harvard University** **2407**
Fluid and electrolyte homeostasis during spaceflight: Ground-based preparative studies in a primate

Period | *Obligations*
02/01/77-01/31/79 | FY78: $40,000 | TOTAL: $90,000

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Moore-Ede, M. C. | JSC/Leach, C. S. | 53-Other Medical

NAS 1-9684 **Massachusetts Institute of Technology** **2408**
Participation in the science planning for the Viking 1975 missions in the area of molecular analysis

Period | *Obligations*
05/01/70-09/30/78 | FY78: $121,582 | TOTAL: $1,324,893

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Biemann, K. | LARC/Williams, T. S., Jr. |
LARC/Glenny, W. R. | 39-Env Sci, NEC

NAS 1-9691 **Massachusetts Institute of Technology** **2409**
Participation in the science planning for the Viking 1975 missions in the area of biology

Period | *Obligations*
06/15/70-09/30/78 | FY78: $4,048 | TOTAL: $80,977

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Rich, A. | LARC/Williams, T. S., Jr. | 51-Biology
LARC/Glenny, W. R.

NAS 1-9702 **Massachusetts Institute of Technology** **2410**
Participation in the science planning for the Viking 1975 missions in the area of radio science

Period | *Obligations*
05/20/70-09/30/78 | FY78: $86,200 | TOTAL: $455,400

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Shapiro, I. I. | LARC/Williams, T. S., Jr. |
LARC/Glenny, W. R. | 99-Multi-Discip

NAS 1-14932 **Massachusetts Institute of Technology** **2411**
Science support for the stratospheric aerosol and gas experiment

Period | *Obligations*
07/06/77-09/30/79 | FY78: $20,000 | TOTAL: $40,000

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Cunnold, D. M. | LARC/McMaster, L. R. | 31-Atmos Sci
LARC/McCormick, M. P.

NAS 1-15154 **Massachusetts Institute of Technology** **2412**
A study of noise and performance of propellers for light aircraft

Period | *Obligations*
01/20/78-05/05/80 | FY78: $187,082 | TOTAL: $187,082

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Ingard, K. V. | LARC/Hubbard, H. H. | 41-Aero Engr
Kerrebrock, J. L.

NAS 1-15268 **Massachusetts Institute of Technology** **2413**
Air transportation research and analysis

Period | *Obligations*
03/15/78-03/14/81 | FY78: $91,977 | TOTAL: $91,977

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Taneja, N. K. | LARC/Maddalon, D. V. | 41-Aero Engr
Ausrotas, R. A.

NAS 2-9473 **Massachusetts Institute of Technology** **2414**
Pioneer/Venus data analysis of the radar altimeter experiment

Period | *Obligations*
01/20/77-11/30/78 | FY78: $90,560 | TOTAL: $190,560

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Pettengill, G. H. | ARC/Hall, C. F. | 11-Astronomy

NAS 2-9476 **Massachusetts Institute of Technology** **2415**
Pioneer/Venus data analysis

Period | *Obligations*
07/12/77-09/30/78 | FY78: $84,680 | TOTAL: $184,680

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Pettengill, G. H. | ARC/Hall, C. F. | 11-Astronomy

NAS 2-9483 **Massachusetts Institute of Technology** **2416**
Data analysis of the orbiter radar mapper

Period | *Obligations*
02/17/78-09/30/78 | FY78: $59,862 | TOTAL: $59,862

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Shapiro, I. I. | ARC/Hall, C. F. | 11-Astronomy
ARC/Porter, D. L.

NAS 3-20473 **Massachusetts Institute of Technology** **2417**
Testing a NASA 20-inch stage and an Air Force mass flow stage

Period | *Obligations*
10/29/76-12/28/78 | FY78: $115,001 | TOTAL: $421,163

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Thompkins, W. T., Jr. | LERC/Crouse, J. E. | 41-Aero Engr
Epstein, A. H.
Kerrebrock, J. L.

NAS 5-11062 **Massachusetts Institute of Technology** **2418**
IMP H&J plasma experiment

Period *Obligations*
05/17/68-10/31/78 FY78: $130,000 TOTAL: $2,279,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bridge, H. S. GSFC/Davis, M. A. 13-Physics

NAS 5-11450 **Massachusetts Institute of Technology** **2419**
An experiment to perform X-ray astronomy on the SAS-C spacecraft

Period *Obligations*
06/16/71-09/30/78 FY78: $1,047,540 TOTAL: $11,330,941
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Clark, G. W. GSFC/Rice, C. F. 11-Astronomy

NAS 5-21980 **Massachusetts Institute of Technology** **2420**
Nimbus F scanning microwave spectrometer data reduction and analysis

Period *Obligations*
01/25/74-03/31/79 FY78: $70,000 TOTAL: $623,816
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Staelin, D. H. GSFC/Theon, J. S. 31-Atmos Sci

NAS 5-22915 **Massachusetts Institute of Technology** **2421**
Nimbus-G experiment team support for solar backscattered ultraviolet and total ozone mapping system

Period *Obligations*
01/28/76-08/27/79 FY78: $71,827 TOTAL: $120,610
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Cunnold, D. M. GSFC/Heath, D. F. 41-Aero Engr
GSFC/Nelsen, E. D.

NAS 5-22929 **Massachusetts Institute of Technology** **2422**
Nimbus-G scanning multichannel microwave radiometer sensor

Period *Obligations*
01/28/76-12/28/79 FY78: $77,843 TOTAL: $122,843
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Staelin, D. H. GSFC/Gloersen, P. 41-Aero Engr

NAS 5-23677 **Massachusetts Institute of Technology** **2423**
Feasibility study for a microwave spectrometer for meteorological observations from synchronous satellites

Period *Obligations*
09/28/76-04/30/79 FY78: $65,000 TOTAL: $155,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Staelin, D. H. GSFC/Shiue, J. C. 11-Astronomy

NAS 5-24096 **Massachusetts Institute of Technology** **2424**
Cosmic background Explorer satellite mission definition study

Period *Obligations*
10/01/76-02/28/78 FY78: $31,508 TOTAL: $50,508
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Weiss, R. GSFC/Mather, J. C. 11-Astronomy
GSFC/Muller, R.

NAS 5-24139 **Massachusetts Institute of Technology** **2425**
Active and passive microwave remote sensory

Period *Obligations*
07/26/77-07/25/79 FY78: TOTAL: $40,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Kong, J. A. GSFC/Shiue, J. C. 45-Elec Engr

NAS 5-24441 **Massachusetts Institute of Technology** **2426**
Data reduction and analysis on small astronomy satellite

Period *Obligations*
09/12/78-09/30/79 FY78: $263,460 TOTAL: $263,460
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Clark, G. W. GSFC/Kupperian, J. E., Jr. 11-Astronomy

NAS 5-24493 **Massachusetts Institute of Technology** **2427**
Design studies for far infrared absolute spectrophotometer for the cosmic background Explorer satellite

Period *Obligations*
03/01/78-02/01/80 FY78: $118,492 TOTAL: $118,492
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Weiss, R. GSFC/Nace, D. A. 11-Astronomy
GSFC/Donohoe, M. J.

NAS 5-25091 **Massachusetts Institute of Technology** **2428**
Broadband communications satellite study group

Period *Obligations*
08/25/78-09/30/79 FY78: $70,000 TOTAL: $70,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Staelin, D. H. GSFC/Ippolitto, L. 45-Elec Engr

NAS 8-27972 **Massachusetts Institute of Technology** **2429**
Design, development, & operations of the AXR-2 integrated modulation collimator experiment under the HEAO program

Period *Obligations*
06/23/72-09/30/79 FY78: $213,584 TOTAL: $1,104,493
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bradt, H. V. MSFC/Manning, H. S. 11-Astronomy
MSFC/Gustin, R. A.

NAS 8-27975 **Massachusetts Institute of Technology** **2430**
Design and development of the AGR-5 high energy X-ray experiment under the HEAO program

Period *Obligations*
06/23/72-09/30/79 FY78: $373,000 TOTAL: $1,815,672
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Lewin, W. H. MSFC/Manning, H. S. 11-Astronomy
MSFC/Jones, J. B.

NAS 8-30537 **Massachusetts Institute of Technology** **2431**
Solidification (crystal growth) in the absence of gravitational forces

Period *Obligations*
12/03/73-08/31/78 FY78: $10,000 TOTAL: $270,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Gatos, H. C. MSFC/Davidson, M. C.
Whitt, A. F. MSFC/Schafer, C. F. 47-Materials Engr

NAS 8-30752 **Massachusetts Institute of Technology** **2432**
Design, development and operations of the HEAO mission B telescope experiment

Period 06/01/74-05/17/80 *Obligations* FY78: $530,000 TOTAL: $2,446,000
Prin. Invest. Clark, G. W.; Bradt, H. V.; Cabizares, C. R.
NASA Tech. Officer MSFC/Meyers, C. H.; MSFC/Power, J. A.
CASE Category 11-Astronomy

NAS 8-31350 **Massachusetts Institute of Technology** **2433**
Uniform dispersions of crystallization processing

Period 07/01/75-10/31/78 *Obligations* FY78: $89,299 TOTAL: $470,808
Prin. Invest. Uhlmann, D. R.
NASA Tech. Officer MSFC/Chassay, R. P.
CASE Category 47-Materials Engr

NAS 8-31552 **Massachusetts Institute of Technology** **2434**
Contact and coalescence of viscous and viscoelastic bodies

Period 11/01/75-10/31/78 *Obligations* FY78: $2,886 TOTAL: $128,161
Prin. Invest. Uhlmann, D. R.
NASA Tech. Officer MSFC/Reeves, F. A.; MSFC/Snyder, R. S.
CASE Category 47-Materials Engr

NAS 8-32925 **Massachusetts Institute of Technology** **2435**
Study for extraterrestrial processing and manufacturing of large space systems

Period 06/20/78-03/31/79 *Obligations* FY78: $79,226 TOTAL: $79,226
Prin. Invest. Miller, R. H.; Smith, D. B.; Akin, D. L.
NASA Tech. Officer MSFC/VonTiesenhausen, G. F.; MSFC/Priest, C. C.
CASE Category 47-Materials Engr

NAS 8-32994 **Massachusetts Institute of Technology** **2436**
Research study growth of solid solution semiconductors

Period 07/17/78-07/16/79 *Obligations* FY78: $40,000 TOTAL: $40,000
Prin. Invest. Hitt, A. F.
NASA Tech. Officer MSFC/Davidson, M. C.; MSFC/Bass, B. G.
CASE Category 13-Physics

NAS 9-12334 **Massachusetts Institute of Technology** **2437**
Apollo passive seismic experiment

Period 01/07/72-09/30/78 *Obligations* FY78: TOTAL: $539,738
Prin. Invest. Toksoz, M. N.
NASA Tech. Officer JSC/Eichelman, W. F.
CASE Category 31-Atmos Sci

NAS 9-12485 **Massachusetts Institute of Technology** **2438**
Mechanisms of deterioration of nutrients

Period 03/17/72-12/31/78 *Obligations* FY78: TOTAL: $311,664
Prin. Invest. Karel, M.
NASA Tech. Officer JSC/Smith, M. C., Jr.
CASE Category 53-Other Medical

NAS 9-15343 **Massachusetts Institute of Technology** **2439**
Definition of Spacelab I experiment on vestibular experiments

Period 04/04/77-06/30/81 *Obligations* FY78: $201,000 TOTAL: $246,000
Prin. Invest. Young, L. R.
NASA Tech. Officer JSC/Luczkowski, S. M.; JSC/Huffstetler, W. J.
CASE Category 59-Life Sci, NEC

NASW 3008 **Massachusetts Institute of Technology** **2440**
Preliminary design and development of an infrared reflectance spectrometer

Period 04/01/77-05/31/77 *Obligations* FY78: TOTAL: $89,800
Prin. Invest. McCord, T. B.
NASA Tech. Officer HQ-SL/Smith, M. J.
CASE Category 11-Astronomy

NCA 2-425801 **Massachusetts Institute of Technology** **2441**
Participation of transfer RNA in the origin of protein biosynthesis

Period 11/01/77-10/31/79 *Obligations* FY78: $17,500 TOTAL: $17,500
Prin. Invest. Rich, A.
NASA Tech. Officer ARC/MacElroy, R. D.
CASE Category 51-Biology

NCA 2-425802 **Massachusetts Institute of Technology** **2442**
Dissection of sensory contributions to motion sickness productions

Period 07/01/78-06/30/79 *Obligations* FY78: $6,455 TOTAL: $6,455
Prin. Invest. Hein, A.
NASA Tech. Officer ARC/Daunton, N. G.
CASE Category 51-Biology

NGL 22-009-013 **Massachusetts Institute of Technology** **2443**
Research on problems of communication in space environment

Period 12/27/62-11/30/78 *Obligations* FY78: $40,000 TOTAL: $1,246,700
Prin. Invest. Kennedy, R. S.
NASA Tech. Officer GSFC/Fitzmaurice, M. W.; GSFC/McAvoy, N.
CASE Category 45-Elec Engr

NGL 22-009-015 **Massachusetts Institute of Technology** **2444**
Theoretical and experimental investigations of interplanetary medium and in gamma ray astronomy

Period 01/01/63-12/31/80 *Obligations* FY78: $280,000 TOTAL: $4,596,339
Prin. Invest. Clark, G. W.
NASA Tech. Officer HQ-SC/Opp, A. G.
CASE Category 13-Physics

NGL 22-009-124 **Massachusetts Institute of Technology** **2445**
Control optimization stabilization and computation of algorithms for space applications

Period 03/30/66-12/31/80 *Obligations* FY78: $75,000 TOTAL: $837,289
Prin. Invest. Athans, M.; Willsky, A. S.
NASA Tech. Officer ARC/Doolin, B. F.
CASE Category 49-Engr, NEC

NGL 22-009-187 Massachusetts Institute of Technology 2446
Lunar geophysics, as related to the Apollo applications program

Period	*Obligations*	
09/02/66-02/28/78	FY78:	TOTAL: $638,782
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Press, F.	HQ-SL/Kosofsky, L.J.	32-Geological Sci
Burns, R. G.	HQ-SL/Roberson, F. I.	
Counselman, C. C., III		

NGL 22-009-308 Massachusetts Institute of Technology 2447
Maturation and development of mechanisms of orientation and postural control

Period	*Obligations*	
12/01/67-11/30/80	FY78: $30,000	TOTAL: $824,646
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Held, R. M.	ARC/Daunton, N. G.	69-Psych, NEC

NGL 22-009-383 Massachusetts Institute of Technology 2448
Research in propulsion and power generation

Period	*Obligations*	
01/16/69-08/31/81	FY78: $118,167	TOTAL: $1,038,167
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kerrebrock, J. L.	LERC/McNally, W. D.	41-Aero Engr
Epstein, A. H.		
Thompkins, W.		

NGL 22-009-521 Massachusetts Institute of Technology 2449
Composition and structure of planetary atmospheres

Period	*Obligations*	
08/10/70-06/30/80	FY78: $34,825	TOTAL: $559,257
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lewis, J. S.	HQ-SL/Dwornik, S. E.	31-Atmos Sci
	HQ-SL/Boyce, J. M.	

NGL 22-009-638 Massachusetts Institute of Technology 2450
Research in space science

Period	*Obligations*	
03/03/72-02/28/81	FY78: $250,000	TOTAL: $1,550,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McCarthy, J. F., Jr.	HQ-LU/Carter, C. H.	99-Multi-Discip

NGL 22-009-640 Massachusetts Institute of Technology 2451
Joint university research program on future air transportation technological needs

Period	*Obligations*	
11/16/71-01/31/81	FY78: $75,000	TOTAL: $493,332
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Simpson, R. W.	LARC/Reid, H. J., Jr.	41-Aero Engr
	LARC/MacE, W. D.	

NGR 22-009-005 Massachusetts Institute of Technology 2452
Detection & identification of organic matter by mass spectrometry

Period	*Obligations*	
12/01/61-09/30/78	FY78: $75,000	TOTAL: $1,033,262
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Biemann, K.	HQ-SB/Young, R. S.	51-Biology

NGR 22-009-277 Massachusetts Institute of Technology 2453
The prebiotic synthesis of polynucleotides and polynucleotide-directed polypeptides

Period	*Obligations*	
12/01/67-09/30/78	FY78: $39,213	TOTAL: $519,802
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rich, A.	HQ-SB/Young, R. S.	12-Chemistry

NGR 22-009-339 Massachusetts Institute of Technology 2454
Investigation of containment/control of fragments from bursting turbine rotors

Period	*Obligations*	
06/14/68-12/01/78	FY78: $72,159	TOTAL: $743,452
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Witmer, E. A.	LERC/Holms, A. G.	41-Aero Engr
	LERC/Weiss, S.	

NGR 22-009-378 Massachusetts Institute of Technology 2455
Study of pollutants from jet aircraft

Period	*Obligations*	
02/14/69-09/30/78	FY78: $94,778	TOTAL: $738,174
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Heywood, J. B.	LERC/Mularz, E. J.	43-Chem Engr
Chigier, N. A.	LERC/Diehl, L. A.	

NGR 22-009-526 Massachusetts Institute of Technology 2456
Astronomy in the region between 1 mm to 0.1 mm wavelengths

Period	*Obligations*	
09/22/70-09/30/78	FY78: $60,400	TOTAL: $416,100
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Weiss, R.	HQ-SC/Boggess, N. W.	11-Astronomy
	HQ-SC/Roman, N. G.	

NGR 22-009-540 Massachusetts Institute of Technology 2457
Lunar sample analysis

Period	*Obligations*	
02/08/71-01/31/79	FY78: $35,000	TOTAL: $501,325
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Simmons, M. G.	JSC/Harris, J. W.	13-Physics

NGR 22-009-551 Massachusetts Institute of Technology 2458
Lunar sample analysis

Period	*Obligations*	
02/11/71-01/31/79	FY78: $76,000	TOTAL: $433,300
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Burns, R. G.	JSC/Harris, J. W.	12-Chemistry

NGR 22-009-583 Massachusetts Institute of Technology 2459
Spectroscopy of the asteroids

Period	*Obligations*	
10/26/71-09/30/76	FY78:	TOTAL: $130,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McCord, T. B.	HQ-SL/Fellows, R. F.	11-Astronomy
	HQ-SL/Donn, B. D.	

NGR 22-009-627 Massachusetts Institute of Technology 2460
Control of serotonin-containing neurons in the brain, by plasma tryptophan

Period	*Obligations*	
08/04/71-10/31/78	FY78: $69,857	TOTAL: $431,360
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wurtman, R. J.	ARC/Winget, C. M.	53-Other Medical
Fernstrom, J.	ARC/Danellis, J. V.	

NGR 22-009-646 Massachusetts Institute of Technology 2461
Lunar sample analysis

Period	*Obligations*	
06/16/71-01/31/79	FY78: $84,200	TOTAL: $519,196
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Uhlmann, D. R.	JSC/Harris, J. W.	47-Materials Engr

NGR 22-009-672 Massachusetts Institute of Technology 2462
Ground-based radar study of the moon and planets

Period	*Obligations*	
03/06/72-10/31/78	FY78: $58,100	TOTAL: $287,900
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Pettengill, G. H.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Dwornik, S. E.	

NGR 22-009-701 Massachusetts Institute of Technology 2463
Integration of visual and motion requirements for flight simulation and ride quality investigation

Period	*Obligations*	
05/18/72-02/28/77	FY78:	TOTAL: $328,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Young, L. R.	LARC/Queijo, M. J.	41-Aero Engr

NGR 22-009-723 Massachusetts Institute of Technology 2464
Bosch process and evaluation of Bosch carbon as a sorbent

Period	*Obligations*	
09/19/72-12/31/78	FY78: $32,950	TOTAL: $163,139
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Reid, R. C.	ARC/Quattrone, P. D.	12-Chemistry

NGR 22-009-727 Massachusetts Institute of Technology 2465
Study in numerical modeling of atmospheric phenomena

Period	*Obligations*	
02/01/73-12/31/79	FY78: $106,000	TOTAL: $570,863
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Stone, P. H.	GSFC/Halem, M.	31-Atmos Sci
Charney, J. G.		

NGR 22-009-730 Massachusetts Institute of Technology 2466
X-ray astronomy experiments from sounding rockets

Period	*Obligations*	
03/22/72-08/31/79	FY78: $170,000	TOTAL: $1,080,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rappaport, S. A.	GSFC/Bissell, E. E.	11-Astronomy
Boughan, E.	HQ-SC/Opp, A. G.	
Levine, A.		

NGR 22-009-735 Massachusetts Institute of Technology 2467
EOTVOS experiment in Earth orbit and related studies

Period	*Obligations*	
06/07/73-06/30/77	FY78:	TOTAL: $100,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Chapman, P. K.	HQ-MT/Roberts, J. L.	13-Physics

NGR 22-009-741 Massachusetts Institute of Technology 2468
Optical and infrared lasers

Period	*Obligations*	
12/01/72-03/31/78	FY78:	TOTAL: $220,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Javan, A.	GSFC/McAvoy, N.	13-Physics
	GSFC/McElroy, J. H.	

NGR 22-009-766 Massachusetts Institute of Technology 2469
Monitoring spacecraft atmosphere contaminants by laser absorption spectroscopy

Period	*Obligations*	
01/01/74-08/31/78	FY78:	TOTAL: $100,455
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Steinfeld, J. I.	ARC/Quattrone, P. D.	12-Chemistry
	ARC/Wydeven, T. J.	

NGR 22-009-781 Massachusetts Institute of Technology 2470
Exploitation of advanced composite materials to lightly loaded structures

Period	*Obligations*	
04/16/73-10/31/76	FY78:	TOTAL: $99,752
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mar, J. W.	LARC/Rhodes, M. D.	41-Aero Engr
	LARC/Stein, M.	

NGR 22-009-790 Massachusetts Institute of Technology 2471
Remote compositional mapping of the lunar surface

Period	*Obligations*	
06/22/73-01/31/79	FY78:	TOTAL: $1,084,165
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McCord, T. B.	HQ-SL/Williams, R. J.	32-Geological Sci
	HQ-SL/Flinn, E. A.	

NGR 22-009-798 Massachusetts Institute of Technology 2472
Role of brain areas controlling eye-head coordination in monkeys

Period	*Obligations*	
09/01/73-11/30/78	FY78: $20,000	TOTAL: $138,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bizzi, E.	ARC/Daunton, N. G.	51-Biology

NGR 22-009-818 Massachusetts Institute of Technology 2473
Aerodynamics of bird flight

Period	*Obligations*	
09/01/73-08/31/78	FY78:	TOTAL: $78,133
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Widnall, S. E.	LARC/Hoad, D. R.	41-Aero Engr
	LARC/Margason, R. J.	

NGR 22-009-826 **Massachusetts Institute of Technology** **2474**
Neural orientation growth and maintenance

Period	*Obligations*	
09/01/73-11/30/78	FY78: $20,000	TOTAL: $138,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Nauta, W. J.	ARC/Daunton, N. G.	51-Biology

NGR 22-009-839 **Massachusetts Institute of Technology** **2475**
Wideband recording system for very long baseline interferometry

Period	*Obligations*	
04/01/74-04/30/79	FY78: $71,000	TOTAL: $366,290
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Shapiro, I. I.	GSFC/Clark, T. A.	99-Multi-Discip
Counselmen, C.C., III	GSFC/Ryan, J. W.	

NSG 1048 **Massachusetts Institute of Technology** **2476**
Wet photoelectric cells, conversion, transfer and storage of intense optical energy

Period	*Obligations*	
05/15/74-02/14/79	FY78: $58,000	TOTAL: $266,935
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wrighton, M. S.	LARC/Byvik, C. E.	12-Chemistry

NSG 1190 **Massachusetts Institute of Technology** **2477**
Characterization of high energy gap semiconductor

Period	*Obligations*	
10/01/75-09/30/78	FY78:	TOTAL: $50,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gatos, H. C.	LARC/Byvik, C. E.	47-Materials Engr
	LARC/Conway, E. J.	

NSG 1219 **Massachusetts Institute of Technology** **2478**
Research on unsteady, nonlinear transonic flow

Period	*Obligations*	
07/10/75-03/15/79	FY78: $29,947	TOTAL: $104,805
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Harris, W. L.	LARC/Bland, S. R.	41-Aero Engr

NSG 1312 **Massachusetts Institute of Technology** **2479**
Optimal design methods for multivariable sampled-data digital control systems

Period	*Obligations*	
07/01/76-02/28/79	FY78: $50,000	TOTAL: $99,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Stein, G.	LARC/Armstrong, E. S.	45-Elec Engr
Athans, M.	LARC/Elliott, J. R.	

NSG 1323 **Massachusetts Institute of Technology** **2480**
Research in algebraic manipulation

Period	*Obligations*	
07/01/76-06/30/79	FY78: $40,000	TOTAL: $134,984
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Moses, J.	LARC/Shoosmith, J. N.	22-Computer Science

NSG 1337 **Massachusetts Institute of Technology** **2481**
Early stages of oxidation of metal surfaces: Experiment proposed for the molecular beam apparatus of the shuttle program

Period	*Obligations*	
10/01/76-09/30/78	FY78:	TOTAL: $30,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gatos, H. C.	LARC/Outlaw, R. A.	47-Materials Engr
Johnson, K. H.		

NSG 1349 **Massachusetts Institute of Technology** **2482**
Dynamic fracture and crack arrest in advanced fiber composites

Period	*Obligations*	
01/01/77-12/31/77	FY78:	TOTAL: $29,171
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Williams, J. H., Jr.	LARC/Fichter, W. B.	46-Mech Engr

NSG 1356 **Massachusetts Institute of Technology** **2483**
Study of feasibility of applying superconducting coil technology to general purpose magnetic balance and suspension system

Period	*Obligations*	
01/01/77-03/31/79	FY78: $122,600	TOTAL: $173,268
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Covert, E. E.	LARC/Boyden, R. P.	41-Aero Engr
Haldeman, C. W.	LARC/Kilgore, R. A.	
Finston, M.		

NSG 1413 **Massachusetts Institute of Technology** **2484**
Distributed feedback and grating-coupled emission lead-tin telluride double heterojunction laser diodes

Period	*Obligations*	
05/01/77-04/30/79	FY78: $45,000	TOTAL: $89,970
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fonstad, C. G.	LARC/Akey, N. D.	13-Physics
	LARC/Hutchby, J. A.	

NSG 1447 **Massachusetts Institute of Technology** **2485**
Performance criterion and model uncertainty issues for log designs in flight control

Period	*Obligations*	
08/15/77-02/28/79	FY78:	TOTAL: $43,800
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Athans, M.	LARC/Armstrong, E. S.	45-Elec Engr
Stein, G.	LARC/Elliott, J. R.	

NSG 1453 **Massachusetts Institute of Technology** **2486**
Magnetic confinement and precipitation of macroscopic particles injected into an aerodynamic boundary layer

Period	*Obligations*	
10/01/77-12/31/78	FY78: $39,988	TOTAL: $39,988
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Melcher, J. R.	LARC/Hefner, J. N.	41-Aero Engr
	LARC/Bushnell, D. M.	

NSG 1502 **Massachusetts Institute of Technology** **2487**
Closed-loop roll control for magnetic balance systems

Period	*Obligations*	
02/01/78-01/31/79	FY78: $80,085	TOTAL: $80,085
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Covert, E. E.	LARC/Boyden, R. P.	41-Aero Engr
Haldeman, C. W.	LARC/Kilgore, R. A.	

NSG 1504 **Massachusetts Institute of Technology** **2488**
Toughening polyimide resins

Period	*Obligations*	
02/01/78-01/31/79	FY78: $44,575	TOTAL: $44,575
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McGarry, F. J.	LARC/Price, H. L.	47-Materials Engr
	LARC/Johnston, N. J.	

NSG 1551 **Massachusetts Institute of Technology** **2489**
Research on atomic hydrogen at cryogenic temperatures, with application to a hydrogen maser frequency standard

Period	*Obligations*	
10/01/78-09/30/79	FY78: $50,000	TOTAL: $50,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Greytak, T. J.	LARC/Singh, J. J.	13-Physics
Kleppner, D.		

NSG 1553 **Massachusetts Institute of Technology** **2490**
Relationships between quadratic weights and linear quadratic regulator properties

Period	*Obligations*	
09/01/78-08/31/79	FY78: $48,900	TOTAL: $48,900
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Stein, G.	LARC/Armstrong, E. S.	45-Elec Engr
Athans, M.		

NSG 2010 **Massachusetts Institute of Technology** **2491**
Study of impact of space shuttle on stratospheric ozone

Period	*Obligations*	
03/01/74-12/31/78	FY78: $238,000	TOTAL: $868,260
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Prinn, R. G.	ARC/Poppoff, I. G.	31-Atmos Sci
	ARC/Whitten, R. C.	

NSG 2032 **Massachusetts Institute of Technology** **2492**
Research on habituation to novel visual-vestibular environments with particular reference to space flight

Period	*Obligations*	
07/01/74-01/14/79	FY78: $75,000	TOTAL: $346,003
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Young, L. R.	ARC/Daunton, N. G.	59-Life Sci, NEC

NSG 2118 **Massachusetts Institute of Technology** **2493**
Experimentation in supervisory controls flight management

Period	*Obligations*	
11/01/75-02/15/79	FY78: $55,000	TOTAL: $167,710
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sheridan, T. B.	ARC/Wempe, T. E.	99-Multi-Discip

NSG 2142 **Massachusetts Institute of Technology** **2494**
Helicopter rotor noise

Period	*Obligations*	
07/01/76-09/15/80	FY78: $49,135	TOTAL: $135,652
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Widnall, S. E.	ARC/Johnson, W. R.	41-Aero Engr
	ARC/Rabbott, J. P., Jr.	

NSG 2172 **Massachusetts Institute of Technology** **2495**
Far infrared observations of AFCRL sources to be made from the C-141

Period	*Obligations*	
07/01/76-10/31/78	FY78: $4,923	TOTAL: $32,440
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kleinman, S. G.	ARC/Haughney, L. C.	11-Astronomy

NSG 2180 **Massachusetts Institute of Technology** **2496**
Simulation evaluation of combined four-dimensional area navigation and airborne traffic situation displays and procedures applied to terminal area maneuvers

Period	*Obligations*	
09/01/76-08/31/79	FY78: $56,000	TOTAL: $167,800
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Athans, M.	ARC/Wempe, T. E.	99-Multi-Discip
Connelly, M. E.	ARC/Palmer, E. A.	

NSG 2196 **Massachusetts Institute of Technology** **2497**
Stratospheric transport processes and the interpretation of data on minor constituents

Period	*Obligations*	
12/01/76-07/31/79	FY78: $30,110	TOTAL: $96,710
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Alyea, F.	ARC/Poppoff, I. G.	31-Atmos Sci
Cunnold, D. M.		
Prinn, R. G.		

NSG 2230 **Massachusetts Institute of Technology** **2498**
Visual vestibular interaction and its application to flight simulation

Period	*Obligations*	
04/01/77-05/31/79	FY78: $60,000	TOTAL: $119,888
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Young, L. R.	ARC/Stewart, J. D.	49-Engr, NEC
Oman, C. M.	ARC/Nagel, D. C.	

NSG 2263 **Massachusetts Institute of Technology** **2499**
Far infrared observations of optical regions

Period	*Obligations*	
10/01/77-09/30/78	FY78: $11,860	TOTAL: $11,860
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wright, E. L.	ARC/Gillespie, C. M., Jr.	11-Astronomy
	ARC/Cameron, R. M.	

NSG 2266 **Massachusetts Institute of Technology** **2500**
An investigation of advanced helicopter rotors having individual blade control

Period *Obligations*
11/01/77-10/31/78 FY78: $99,906 TOTAL: $99,906
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Ham, N. D. ARC/Johnson, W. R. 41-Aero Engr
ARC/Biggers, J. C.

NSG 2334 **Massachusetts Institute of Technology** **2501**
Maximizing storage stability of foods: Evaluation of research needs

Period *Obligations*
09/01/78-03/01/79 FY78: $20,287 TOTAL: $20,287
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Karel, M. ARC/Quattrone, P. D. 59-Life Sci, NEC

NSG 2335 **Massachusetts Institute of Technology** **2502**
Regeneration of plant nutrients from waste processing effluents

Period *Obligations*
08/01/78-02/01/79 FY78: $19,715 TOTAL: $19,715
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Meissner, H. P. ARC/Quattrone, P. D. 59-Life Sci, NEC

NSG 3017 **Massachusetts Institute of Technology** **2503**
Silicon surface phenomena related to energy conversion

Period *Obligations*
05/01/74-02/22/79 FY78: $38,000 TOTAL: $163,100
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Gatos, H. C. LERC/Weinberg, I. 13-Physics
LERC/Brandhorst, H. R., Jr.

NSG 3044 **Massachusetts Institute of Technology** **2504**
Special finite elements for the analysis of flaw growth and fracture in fiber composites

Period *Obligations*
02/01/75-05/31/79 FY78: $50,000 TOTAL: $249,195
Prin. Invest. *NASA Tech. Officer* *CASE Category*
McGarry, F. G. LERC/Chamis, C. C. 49-Engr, NEC
Mandell, J. F. LERC/Smith, G. T.

NSG 3046 **Massachusetts Institute of Technology** **2505**
Directional solidification of gamma/gamma prime-delta in situ composites

Period *Obligations*
06/30/75-06/30/79 FY78: $39,952 TOTAL: $169,480
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Flemings, M. C. LERC/Scheuermann, C. M. 47-Materials Engr

NSG 3061 **Massachusetts Institute of Technology** **2506**
A chromatographic analysis of the response of polymeric fire-detection devices to combustion

Period *Obligations*
05/01/75-02/28/77 FY78: TOTAL: $84,946
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Senturia, S. D. LERC/Gluyas, R. E. 19-Phys Sci, NEC
Kastner, M. A.
Fonstad, C. G.

NSG 3064 **Massachusetts Institute of Technology** **2507**
Monitoring of elastic stresses by acoustic emission

Period *Obligations*
07/01/75-06/30/78 FY78: TOTAL: $78,420
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Williams, J. H., Jr. LERC/Vary, A. 47-Materials Engr

NSG 3076 **Massachusetts Institute of Technology** **2508**
Effects of fuel composition on soot formation in combusters

Period *Obligations*
09/01/75-09/30/79 FY78: $60,006 TOTAL: $219,161
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Hoult, D. P. LERC/Brabbs, T. A. 41-Aero Engr
Rife, J. M.

NSG 3079 **Massachusetts Institute of Technology** **2509**
Development of techniques for turbomachinery flutter clearance

Period *Obligations*
07/15/75-12/01/78 FY78: $70,000 TOTAL: $169,933
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Kerrebrock, J. L. LERC/Adamczyk, J. J. 41-Aero Engr
Dugundji, J.

NSG 3088 **Massachusetts Institute of Technology** **2510**
Submillimeter laser Thomson scattering system for measurement of ion temperatures in summa

Period *Obligations*
12/11/75-03/01/77 FY78: $314 TOTAL: $60,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Lax, B. LERC/Reinmann, J. J. 13-Physics
Cohn, D. R.

NSG 3102 **Massachusetts Institute of Technology** **2511**
Soot information and burnout in flames

Period *Obligations*
03/15/76-09/15/77 FY78: TOTAL: $43,390
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Howard, J. B. LERC/Norgren, C. T. 43-Chem Engr

NSG 3129 **Massachusetts Institute of Technology** **2512**
Studies of flow noise and acoustic power flow in lined ducts

Period *Obligations*
11/01/76-10/31/79 FY78: TOTAL: $51,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Ungard, K. U. LERC/Baumeister, K. J. 41-Aero Engr
LERC/Feiler, C. E.

NSG 3175 **Massachusetts Institute of Technology** **2513**
Development of electromagnetic mass drivers

Period	*Obligations*	
12/01/77-11/30/78	FY78: $30,800	TOTAL: $30,800
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kolm, H. H.	LERC/Pelouch, J. J., Jr.	42-Astro Engr

NSG 3187 **Massachusetts Institute of Technology** **2514**
Theoretical and experimental study of the shear layer between two swirling streams

Period	*Obligations*	
04/01/78-03/31/79	FY78: $41,329	TOTAL: $41,329
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kerrebrock, J. L.	LERC/Braun, W. H.	49-Engr, NEC

NSG 3208 **Massachusetts Institute of Technology** **2515**
Strut induced aerodynamic forging functions

Period	*Obligations*	
07/05/78-07/04/79	FY78: $35,000	TOTAL: $35,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Greitzer, E. M.	LERC/Adamczyk, J. J.	41-Aero Engr

NSG 3210 **Massachusetts Institute of Technology** **2516**
Wave propagation in fiber composites relating to acoustic-ultrasonic NDE techniques

Period	*Obligations*	
08/01/78-07/31/79	FY78: $59,905	TOTAL: $59,905
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Williams, J. H., Jr.	LERC/Vary, A.	47-Materials Engr

NSG 5076 **Massachusetts Institute of Technology** **2517**
Numerical study of the atmospheric circulation of Venus

Period	*Obligations*	
08/17/75-11/14/78	FY78: $33,711	TOTAL: $97,711
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rivas, E. K. Stone, P. H.	GSFC/Hansen, J. E.	11-Astronomy

NSG 5113 **Massachusetts Institute of Technology** **2518**
Research in stratospheric dynamics

Period	*Obligations*	
07/01/76-06/30/79	FY78: $79,568	TOTAL: $122,503
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Stone, P. H.	GSFC/Hansen, J. E.	31-Atmos Sci

NSG 5150 **Massachusetts Institute of Technology** **2519**
Shuttle based very long baseline interferometry

Period	*Obligations*	
01/01/77-12/31/77	FY78:	TOTAL: $30,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Burke, B. F.	GSFC/Stone, R. G.	11-Astronomy

NSG 5157 **Massachusetts Institute of Technology** **2520**
High speed correlation algorithms for massively parallel machines

Period	*Obligations*	
02/01/77-06/30/78	FY78:	TOTAL: $52,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McClellan, J. H.	GSFC/Schaefer, D. H.	45-Elec Engr

NSG 5166 **Massachusetts Institute of Technology** **2521**
Theoretical and numerical study of climate and climate change

Period	*Obligations*	
03/21/77-03/20/81	FY78: $72,199	TOTAL: $175,486
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Charney, J. G. Stone, P. H.	GSFC/Halem, M.	31-Atmos Sci

NSG 5204 **Massachusetts Institute of Technology** **2522**
Evaluation of the quality of precipitation data from satellite-borne radar

Period	*Obligations*	
09/01/77-05/31/78	FY78:	TOTAL: $9,400
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Austin, P. M. Geotis, S. G.	GSFC/Wexler, R.	31-Atmos Sci

NSG 5253 **Massachusetts Institute of Technology** **2523**
Research of gravity field over the Indian Ocean

Period	*Obligations*	
03/15/78-03/14/79	FY78: $50,000	TOTAL: $50,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sclater, J. G. Munsch, C.	GSFC/Smith, D. E.	32-Geological Sci

NSG 5260 **Massachusetts Institute of Technology** **2524**
Geophysical study of the structure and processes of the continental convergence zones

Period	*Obligations*	
04/01/78-03/31/79	FY78: $40,000	TOTAL: $40,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Molnar, P. Toksoz, M. N.	GSFC/Frey, H. V. GSFC/Mead, G. D.	32-Geological Sci

NSG 7010 **Massachusetts Institute of Technology** **2525**
Precision selenodesy and lunar libration through very long baseline interferometry observation of ALSEPS

Period	*Obligations*	
01/01/74-06/30/79	FY78:	TOTAL: $310,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Counselman, C.C., III	HQ-SL/Quaide, W. L. HQ-SL/French, B. M.	32-Geological Sci

NSG 7048 **Massachusetts Institute of Technology** **2526**
Structure and composition of a lunar region: A synthesis

Period	*Obligations*	
03/01/74-02/28/77	FY78:	TOTAL: $149,700
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McCord, T. B.	HQ-SL/Williams, R. J. HQ-SL/Flinn, E. A.	32-Geological Sci

NSG 7077 **Massachusetts Institute of Technology** 2527
Chemical aspects of lunar origin and physical studies of lunar and meteoritic materials

Period	*Obligations*	
07/01/74-05/31/78	FY78:	TOTAL: $58,900

Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Suomi, V. E.	HQ-SL/Williams, R. J.	32-Geological Sci
Brecher, A.		
Skibo, D. N.		

NSG 7081 **Massachusetts Institute of Technology** 2528
Models of the composition, structure and evolution of the lunar interior

Period	*Obligations*	
06/01/74-02/28/80	FY78:	TOTAL: $600,481

Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Toksoz, M. N.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. M.	

NSG 7118 **Massachusetts Institute of Technology** 2529
Very long baseline interferometry observations of ALSEP transmitters

Period	*Obligations*	
01/01/75-09/30/77	FY78:	TOTAL: $58,176

Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Counselman, C.C., III	HQ-SL/Goldstein, B. E.	32-Geological Sci

NSG 7186 **Massachusetts Institute of Technology** 2530
An observatory search for and study of new IR sources reported in the AFCRL catalogue

Period	*Obligations*	
12/01/75-11/30/78	FY78: $30,000	TOTAL: $90,000

Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kleinmann, S.	HQ-SC/Boggess, N. W.	11-Astronomy
	HQ-SC/Roman, N. G.	

NSG 7227 **Massachusetts Institute of Technology** 2531
Computational aspects in the interpretation of geological formations

Period	*Obligations*	
04/15/76-04/14/78	FY78:	TOTAL: $110,000

Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Weinstein, M.	HQ-RE/Gevarter, W. B.	49-Engr, NEC
Purbrick, J.	JPL/Whitney, W.	
Winston, P. H.		

NSG 7273 **Massachusetts Institute of Technology** 2532
Minerology of the surfaces of Mercury and Mars

Period	*Obligations*	
10/01/76-09/30/77	FY78:	TOTAL: $38,950

Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McCord, T. B.	HQ-SL/Dwornik, S. E.	32-Geological Sci
	HQ-SL/Wahmann, R.	

NSG 7297 **Massachusetts Institute of Technology** 2533
Studies of stress history of terrestrial lithospheres

Period	*Obligations*	
01/01/77-12/31/78	FY78: $27,000	TOTAL: $42,000

Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Solomon, S. C.	HQ-SL/Dwornik, S. E.	32-Geological Sci
	HQ-SL/Boyce, J. M.	

NSG 7328 **Massachusetts Institute of Technology** 2534
Research on integrated silicon balometers

Period	*Obligations*	
03/01/77-02/28/79	FY78: $58,000	TOTAL: $113,500

Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Weiss, R.	HQ-SC/Boggess, N. W.	11-Astronomy
	HQ-SC/Roman, N. G.	

NSG 7329 **Massachusetts Institute of Technology** 2535
Application of lunar laser ranging data to a study of plate tectonic driving forces

Period	*Obligations*	
04/01/78-03/31/79	FY78: $60,000	TOTAL: $125,820

Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Soloman, S. C.	HQ-ER/Flinn, E. A.	32-Geological Sci
Toksuz, M. N.	HQ-SL/Quaide, W. L.	

NSG 7331 **Massachusetts Institute of Technology** 2536
Crystal growth of device quality galium arsenite in space

Period	*Obligations*	
04/01/79-03/31/81	FY78: $300,000	TOTAL: $800,000

Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gatos, H. C.	HQ-ET/Vitale, J. A.	31-Atmos Sci

NSG 7338 **Massachusetts Institute of Technology** 2537
Temperature dependencies of electronic transition energies of healed lunar materials

Period	*Obligations*	
03/01/77-09/30/78	FY78:	TOTAL: $40,000

Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Burns, R. G.	HQ-SL/Quaide, W. L.	32-Geological Sci

NSG 7339 **Massachusetts Institute of Technology** 2538
X-ray balloon observations from the Northern and Southern Hemispheres

Period	*Obligations*	
04/01/77-11/30/78	FY78: $85,000	TOTAL: $165,000

Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lewin, W. G.	HQ-SC/Opp, A. G.	11-Astronomy

NSG 7396 **Massachusetts Institute of Technology** 2539
Payloads for space

Period	*Obligations*	
09/12/77-10/31/78	FY78: $78,000	TOTAL: $78,000

Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mar, J. W.	HQ-RR/Schwenk, F. C.	42-Astro Engr
	HQ-RR/Henry, W.	

NSG 7428 **Massachusetts Institute of Technology** **2540**
Analysis of lunar ranging data for earth dynamics applications

Period	*Obligations*	
04/01/79-07/31/79	FY78: $60,000	TOTAL: $60,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Counselman, C.C., III	HQ-ER/Flinn, E. A.	32-Geological Sci
Shapiro, I. I.		
King, R. W.		

NSG 7432 **Massachusetts Institute of Technology** **2541**
Experiments to probe the chemistry and surface activities of the Martian surface

Period	*Obligations*	
01/01/78-12/31/78	FY78: $32,997	TOTAL: $32,997
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Biemann, K.	HQ-SL/Dwornik, S. E.	32-Geological Sci

NSG 7438 **Massachusetts Institute of Technology** **2542**
Seismic sciences and experimental concepts for active seismic experiment on Mars

Period	*Obligations*	
04/01/78-03/31/79	FY78: $18,740	TOTAL: $18,740
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Solomon, S. C.	HQ-SL/Dwornik, S. E.	32-Geological Sci
Toksoz, M. N.	HQ-SL/Boyce, J.	

NSG 7467 **Massachusetts Institute of Technology** **2543**
Field studies of possible impact craters in Ontario

Period	*Obligations*	
06/15/78-06/14/79	FY78: $15,000	TOTAL: $15,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Pinson, W.	HQ-SL/Quaide, W.	32-Geological Sci

NSG 9057 **Massachusetts Institute of Technology** **2544**
Magnetic parallels: Lunar, meteoritic, and terrestrial rocks

Period	*Obligations*	
02/01/77-01/31/79	FY78:	TOTAL: $34,950
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Brecher, A.	JSC/Harris, J. W.	32-Geological Sci

NCA 2-785801 **Tufts University** **2545**
Psychometric modeling of the human information processing demands of interactions with avionic computers

Period	*Obligations*	
01/01/78-12/31/78	FY78: $11,072	TOTAL: $11,072
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Chechile, R. A.	ARC/Palmer, E. A.	69-Psych, NEC

NSG 2156 **Tufts University** **2546**
Study of pilot controller interaction under various simulated advanced ATC and navigation concepts

Period	*Obligations*	
06/01/76-08/31/79	FY78: $119,508	TOTAL: $262,062
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kreifeldt, J. G.	ARC/Wempe, T. E.	99-Multi-Discip

NSG 1295 **University of Lowell** **2547**
Structural response and input identification

Period	*Obligations*	
04/01/76-03/31/79	FY78: $29,974	TOTAL: $88,827
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McElman, J. A.	LARC/Fralich, R. W.	41-Aero Engr
O'Callahan, J. C.	LARC/Pinson, L. D.	
Shepard, G. D.		

NAS 1-15162 **University of Massachusetts - Amherst** **2548**
Viking guest investigator program

Period	*Obligations*	
01/05/78-09/30/78	FY78: $4,640	TOTAL: $4,640
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wise, D. U.	LARC/Spence, D. C.	31-Atmos Sci
McGill, G. E.		

NAS 2-9129 **University of Massachusetts - Amherst** **2549**
Interdisciplinary scientist and radar team member

Period	*Obligations*	
01/22/76-12/31/79	FY78: $30,000	TOTAL: $46,456
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McGill, G. E.	ARC/Hall, C. F.	11-Astronomy
	ARC/Porter, D. L.	

NGL 22-010-023 **University of Massachusetts - Amherst** **2550**
Theoretical studies of diffuse reflection and transmission of radiation in planetary atmospheres

Period	*Obligations*	
05/24/67-08/31/80	FY78: $49,950	TOTAL: $458,949
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Irvine, W. M.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Quaide, W. L.	

NGL 22-010-025 **University of Massachusetts - Amherst** **2551**
Study of solar chromosphere from balloon altitudes

Period	*Obligations*	
10/24/67-12/31/77	FY78:	TOTAL: $588,082
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Strong, J.	HQ-ST/Timothy, A. F.	11-Astronomy

NGL 22-010-089 **University of Massachusetts - Amherst** **2552**
Lunar sample analysis

Period	*Obligations*	
03/16/71-01/31/79	FY78: $49,700	TOTAL: $177,875
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Haggerty, S. E.	JSC/Harris, J. W.	13-Physics

NGR 22-010-076 **University of Massachusetts - Amherst** **2553**
Reconnaissance study of large geologic ring structures on Mars

Period	*Obligations*	
05/19/70-01/31/79	FY78: $40,937	TOTAL: $218,991
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McGill, G. E.	HQ-SL/Dwornik, S. E.	32-Geological Sci
	HQ-SL/Boyce, J. M.	

NSG 7397 **University of Massachusetts - Amherst** **2554**
Surface chemistry and the search for life on Mars

Period	*Obligations*	
10/01/77-09/30/78	FY78: $28,561	TOTAL: $28,561
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Huguenin, R. L.	HQ-SB/Young, R. S.	12-Chemistry

NSG 7405 **University of Massachusetts - Amherst** **2555**
Mineralogy and weathering processes on Mars

Period	*Obligations*	
10/01/77-09/30/78	FY78: $34,868	TOTAL: $34,868
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Huguenin, R. L.	HQ-SL/Dwornik, S. E. HQ-SL/Boyce, J. M.	32-Geological Sci

NSG 9069 **University of Massachusetts - Amherst** **2556**
Comparative geochemical and petrological study of lunar and terrestrial basaltic volcanism

Period	*Obligations*	
05/15/78-01/31/79	FY78: $21,707	TOTAL: $21,707
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rhodes, J. M.	JSC/Harris, J. W.	32-Geological Sci

NSG 5218 **Williams College** **2557**
Effects of hydrogen atom spin exchange collisions on atomic hydrogen maser oscillation frequency

Period	*Obligations*	
12/01/77-11/30/78	FY78: $11,700	TOTAL: $11,700
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Crampton, S. B.	GSFC/Reinhardt, V. S. GSFC/Wardrip, S. C.	13-Physics

NSG 3137 **Worcester Polytechnic Institute** **2558**
Investigation of the 1.15 micron photoconductive response of silicon devices

Period	*Obligations*	
02/01/77-05/31/79	FY78: $43,967	TOTAL: $87,361
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lanyon, H. P.	LERC/Godlewski, M. P. LERC/Brandhorst, H. W., Jr.	45-Elec Engr

NSG 7154 **Worcester Polytechnic Institute** **2559**
Mission-oriented studies of planetary biology

Period	*Obligations*	
10/01/75-09/30/78	FY78: $100,000	TOTAL: $336,390
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Danielli, J. F.	HQ-SB/Young, R. S.	51-Biology

NSG 7392 **Worcester Polytechnic Institute** **2560**
Martian chemistry relevant to biological activity and the Viking labeled release experiments

Period	*Obligations*	
12/15/77-12/14/78	FY78: $49,708	TOTAL: $49,708
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Plumb, R. C.	HQ-SB/Young, R. S.	12-Chemistry

MICHIGAN

NGL 23-004-083 **Michigan State University** **2561**
Use of remote sensing for land use policy formulation

Period	*Obligations*	
06/08/72-05/31/81	FY78: $110,000	TOTAL: $880,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Boylan, M. G.	HQ-ET/Vitale, J. A.	39-Env Sci, NEC

NGR 23-004-091 **Michigan State University** **2562**
A study of structure of a large angle oblique jet impingement flow

Period	*Obligations*	
11/01/73-12/31/78	FY78:	TOTAL: $83,248
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Marx, G.	LARC/Hardin, J. C.	41-Aero Engr

NSG 7293 **Michigan State University** **2563**
Radiative fluid dynamic studies of the sun and compact H II regions

Period	*Obligations*	
10/01/76-11/31/78	FY78: $10,000	TOTAL: $25,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Stein, R. F.	HQ-ST/Bohlin, J. D.	13-Physics

NSG 3215 **Michigan Technological University** **2564**
Diffusion modeling of cyclic oxidation transport processes in Ni-base alloys

Period	*Obligations*	
08/01/78-07/31/79	FY78: $26,775	TOTAL: $26,775
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Heckel, R. W.	LERC/Barrett, C. A. LERC/Lowell, C. E.	47-Materials Engr

NAS 1-14394 **University of Michigan - Ann Arbor** **2565**
Science support for the limb infrared monitor of the stratosphere experiment

Period	*Obligations*	
04/09/76-10/31/78	FY78: $25,000	TOTAL: $56,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Drayson, S. R.	LARC/Russell, J. M., III LARC/James, R. L., Jr.	31-Atmos Sci

NAS 1-15333 **University of Michigan - Ann Arbor** **2566**
High-toughness graphite/epoxy composite material experiment for the Long Duration Exposure Facility (LDEF) phases I and II

Period	*Obligations*	
03/31/78-03/30/79	FY78: $18,000	TOTAL: $18,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Felbeck, D. K. Durant, W. H.	LARC/Jones, J. L.	47-Materials Engr

NAS 2-9126 **University of Michigan - Ann Arbor** **2567**
Interdisciplinary scientist, Pioneer/Venus program

Period	*Obligations*	
02/10/76-09/30/78	FY78: $42,217	TOTAL: $105,628
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Donahue, T. M.	ARC/Hall, C. F. ARC/Porter, D. L.	11-Astronomy

NAS 2-9130 **University of Michigan - Ann Arbor** **2568**
Interdisciplinary scientist, Pioneer/Venus program

Period	*Obligations*	
02/09/76-09/30/78	FY78: $15,166	TOTAL: $64,691
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Nagy, A. F.	ARC/Hall, C. F. ARC/Porter, D. L.	11-Astronomy

NAS 5-11376 **University of Michigan - Ann Arbor** **2569**
AE-C, D, & E Pelz experiment

Period	*Obligations*	
01/07/71-11/30/78	FY78: $38,743	TOTAL: $1,079,933
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Carignan, G. R.	GSFC/Hedin, A. E. GSFC/Spencer, N. W.	31-Atmos Sci

NAS 5-11380 **University of Michigan - Ann Arbor** **2570**
AE-C, D, and E neutral temperature experiment

Period	*Obligations*	
02/03/71-11/30/78	FY78: $39,022	TOTAL: $1,050,320
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Carignan, G. R.	GSFC/Spencer, N. W.	31-Atmos Sci

NAS 5-20622 **University of Michigan - Ann Arbor** **2571**
Nitric oxide detector

Period	*Obligations*	
06/18/74-11/30/76	FY78:	TOTAL: $342,428
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Horvath, J. J.	GSFC/Theon, J. S.	31-Atmos Sci

NAS 5-20939 **University of Michigan - Ann Arbor** **2572**
Laboratory tests and development of mass spectrometer subsystems

Period	*Obligations*	
02/13/75-12/31/78	FY78: $31,889	TOTAL: $229,571
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Carignan, G. R. Kennedy, B. R.	GSFC/Cooley, J. E. GSFC/Niemann, H. B.	31-Atmos Sci

NAS 5-22587 **University of Michigan - Ann Arbor** **2573**
Pioneer/Venus electron temperature probe

Period	*Obligations*	
09/29/75-07/01/78	FY78:	TOTAL: $413,558
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Donahue, T. M. Nagy, A. F.	GSFC/Krehbiel, J. F. GSFC/Brace, L. H.	31-Atmos Sci

NAS 5-22875 **University of Michigan - Ann Arbor** **2574**
Particle measurement systems

Period	*Obligations*	
12/04/75-11/03/77	FY78:	TOTAL: $60,795
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
MacNee, A. B.	GSFC/Trainor, J. H.	13-Physics

NAS 5-23006 **University of Michigan - Ann Arbor** **2575**
Atmosphere Explorer visual airglow photometer

Period	*Obligations*	
08/24/71-09/30/79	FY78: $260,000	TOTAL: $1,603,585
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hays, P. B. Carignan, G. R.	GSFC/Gustafson, C.	31-Atmos Sci

NAS 5-23230 **University of Michigan - Ann Arbor** **2576**
Program of aeronautical research utilizing thermosphere probe

Period	*Obligations*	
06/18/73-09/30/78	FY78:	TOTAL: $336,927
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Carignan, G. R.	GSFC/Spencer, N. W.	31-Atmos Sci

NAS 5-24135 **University of Michigan - Ann Arbor** **2577**
Design study for neutral atmosphere wind and temperature experiment

Period	*Obligations*	
04/22/77-04/22/78	FY78: $13,110	TOTAL: $63,024
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Carignan, G. R.	GSFC/Spencer, N. W.	11-Astronomy

NAS 5-24295 **University of Michigan - Ann Arbor** **2578**
Neutral atmosphere composition experiment for the dynamic Explorer

Period	*Obligations*	
07/26/77-04/30/81	FY78: $203,245	TOTAL: $203,245
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Carignan, G. R.	GSFC/Fellerman, K. D. GSFC/Lidston, J. M.	13-Physics

NAS 5-24296 **University of Michigan - Ann Arbor** **2579**
Fabry-Perot inteferometer for the dynamic Explorer

Period	*Obligations*	
07/26/77-04/28/81	FY78: $435,576	TOTAL: $435,576
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hays, P. B.	GSFC/Fellerman, K. D. GSFC/Lidston, J. M.	13-Physics

NAS 5-24331 **University of Michigan - Ann Arbor** **2580**
Theoretical investigation to identify and develop specific aeronomic studies and problems adaptable to the AE satellite

Period	*Obligations*	
12/01/77-09/30/79	FY78: $101,531	TOTAL: $101,531
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Walker, J. C.	GSFC/Wende, C. D.	31-Atmos Sci

NAS 5-24454 **University of Michigan - Ann Arbor** **2581**
Design of electronic system for Jupiter orbiter probe

Period	*Obligations*	
02/14/78-10/01/78	FY78: $98,000	TOTAL: $98,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Carignan, G. R.	GSFC/Niemann, H. B. GSFC/Cooley, J. E.	11-Astronomy

NAS 5-25002 **University of Michigan - Ann Arbor** **2582**
Wind and temperature spectrometer for the dynamics Explorer spacecraft

Period	*Obligations*	
03/30/78-02/28/81	FY78: $171,903	TOTAL: $171,903
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Carignan, G. R.	GSFC/Spencer, N. W.	31-Atmos Sci

NAS 5-25031 **University of Michigan - Ann Arbor** **2583**
Develop, fabricate, test, and support hardware for the San Marco/wind and temperature experiment

Period	*Obligations*	
05/05/78-10/31/79	FY78: $250,000	TOTAL: $250,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Carignan, G. R.	GSFC/Spencer, N. W.	31-Atmos Sci

NAS 5-25038 **University of Michigan - Ann Arbor** **2584**
Theory formulation and analysis support for the dynamics Explorer spacecraft

Period	*Obligations*	
08/22/78-02/28/83	FY78: $10,000	TOTAL: $10,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Nagy, A. F.	GSFC/Hoffman, R. A. GSFC/Smith, P. H.	13-Physics

NAS 5-25145 **University of Michigan - Ann Arbor** **2585**
Electronic system parts for Galileo probe neutral mass spectrometer

Period	*Obligations*	
07/31/78-01/31/80	FY78: $105,000	TOTAL: $105,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Carignan, G. R.	GSFC/Niemann, H. B.	31-Atmos Sci

NAS 5-25153 **University of Michigan - Ann Arbor** **2586**
Fabrication of electronic system for the Galileo probe neutral mass spectrometer

Period	*Obligations*	
08/10/78-04/19/82	FY78: $102,000	TOTAL: $102,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Carignan, G. R.	GSFC/Niemann, H. B.	31-Atmos Sci

NAS 5-25158 **University of Michigan - Ann Arbor** **2587**
Cmos Radiation Effects Measurement (CREM) experiment and associated Ground Support Equipment (GSE)

Period	*Obligations*	
08/16/78-08/17/79	FY78: $64,000	TOTAL: $64,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Carignan, G. R.	GSFC/Haykin, D. GSFC/Cliff, R.	13-Physics

NAS 6-2794 **University of Michigan - Ann Arbor** **2588**
Design, fabricate and test five payloads

Period	*Obligations*	
10/15/76-11/13/78	FY78: $187,124	TOTAL: $347,124
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Horvath, J. J.	WFC/Rossi, L. C. WFC/Perry, T. W., Jr.	31-Atmos Sci

NAS 8-31987 **University of Michigan - Ann Arbor** **2589**
Mass spectrometer for induced environment contamination monitor

Period	*Obligations*	
04/30/76-11/29/79	FY78: $260,000	TOTAL: $685,800
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Carignan, G. R. Maurer, J. C. Eusch, T. A.	MSFC/Ruff, R. C. MSFC/Naumann, R. J.	19-Phys Sci, NEC

NAS 8-32332 **University of Michigan - Ann Arbor** **2590**
Retarding ion mass spectrometer on the high altitude electrodynamic Explorer

Period	*Obligations*	
01/17/77-12/31/78	FY78:	TOTAL: $14,976
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Carignan, G. R.	MSFC/Chappell, C. R. MSFC/Lewter, B. J.	19-Phys Sci, NEC

NAS 8-32569 **University of Michigan - Ann Arbor** **2591**
Spacelab mission I experiment 24, an imaging spectrometric observatory for Spacelab I

Period	*Obligations*	
04/15/77-09/01/81	FY78: $1,338,401	TOTAL: $1,627,962
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Torr, M. R.	MSFC/Jones, C. MSFC/Ise, R.	19-Phys Sci, NEC

NAS 8-32661 **University of Michigan - Ann Arbor** **2592**
Spacelab outgassing

Period	*Obligations*	
09/20/77-01/19/81	FY78: $30,000	TOTAL: $60,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Carignan, G. R.	MSFC/Ruff, R. C. MSFC/Shriver, E. L.	39-Env Sci, NEC

NAS 9-15244 **University of Michigan - Ann Arbor** **2593**
Evaluations of postural mechanisms under dynamic conditions

Period	*Obligations*	
02/01/77-01/31/79	FY78: $100,600	TOTAL: $129,871
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Anderson, D. J.	JSC/Homick, J. L.	53-Other Medical

NAS 9-15375 **University of Michigan - Ann Arbor** **2594**
Definition of Spacelab I experiment for adaption of vestibulo-spinal reflex mechanisms during space flight

Period	*Obligations*	
06/01/77-06/01/79	FY78: $68,000	TOTAL: $81,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Anderson, D. J.	JSC/Reschke, M. F.	59-Life Sci, NEC

NAS 9-15663 **University of Michigan - Ann Arbor** **2595**
Design and development of linear accelerator

Period	*Obligations*	
08/01/78-08/01/79	FY78: $38,588	TOTAL: $38,588
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Anderson, D. J.	JSC/Reschke, M. F.	53-Other Medical

NASW 3065 **University of Michigan - Ann Arbor** **2596**
Stratospheric specie measurements and techniques

Period	*Obligations*	
04/01/77-10/31/77	FY78: $81,758	TOTAL: $366,462
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Anderson, J. G.	HQ-ST/Tilford, S. G.	11-Astronomy

NGL 23-005-010 **University of Michigan - Ann Arbor** **2597**
Structural analysis of aircraft tires

Period	*Obligations*	
01/02/63-05/31/77	FY78:	TOTAL: $357,731
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Clark, S. R.	LARC/McCarty, J. L.	41-Aero Engr

NGL 23-005-275 **University of Michigan - Ann Arbor** **2598**
Solar research program of McMath-Hulbert Observatory and improvement of photoheliographic telescope

Period	*Obligations*	
04/08/68-09/30/78	FY78: $90,000	TOTAL: $690,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mohler, O. C.	HQ-ST/Bohlin, J. D.	11-Astronomy

NGR 23-005-015 **University of Michigan - Ann Arbor** **2599**
Theoretical investigation of space charge waves in ionosphere and space plasma sheaths

Period	*Obligations*	
10/28/63-06/30/79	FY78: $130,300	TOTAL: $1,523,105
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Nagy, A. F.	HQ-ST/Cauffman, D. P. HQ-ST/Schmerling, E. R.	31-Atmos Sci

NGR 23-005-094 **University of Michigan - Ann Arbor** **2600**
An investigation of plasma kinetics, with emphasis on the interaction between rarefied plasmas and moving bodies

Period	*Obligations*	
06/26/64-04/30/78	FY78:	TOTAL: $382,601
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Liu, W. C.	HQ-SL/Fellows, R. F. HQ-SL/Brunk, W. E.	31-Atmos Sci

NGR 23-005-320 **University of Michigan - Ann Arbor** **2601**
Theoretical and experimental studies of spacecraft space plasma interactions

Period	*Obligations*	
01/29/69-09/30/78	FY78: $40,000	TOTAL: $447,557
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Samir, U.	HQ-ST/Cauffman, D. P.	13-Physics

NGR 23-005-360 **University of Michigan - Ann Arbor** **2602**
A program in aeronomy

Period	*Obligations*	
12/29/69-11/30/78	FY78: $170,000	TOTAL: $1,451,101
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sharp, W. E.	GSFC/Bissell, E. E. HQ-ST/Schmerling, E. R.	13-Physics

NGR 23-005-464 **University of Michigan - Ann Arbor** **2603**
Optical studies of galactic X-ray sources

Period	*Obligations*	
03/02/71-02/28/79	FY78: $18,375	TOTAL: $126,825
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hiltner, W. A.	HQ-SC/Rosendhal, J. D. HQ-SC/Roman, N. G.	11-Astronomy

NGR 23-005-528 **University of Michigan - Ann Arbor** **2604**
Fiber-reinforced solids possessing great fracture toughness & the role of interfacial strength

Period	*Obligations*	
07/26/72-10/31/78	FY78: $38,410	TOTAL: $147,072
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Felbeck, D. K.	LARC/Fichter, W. B. LARC/Elber, W.	47-Materials Engr

NGR 23-005-540 **University of Michigan - Ann Arbor** **2605**
Experimental and theoretical study of sound from meteors

Period	*Obligations*	
01/07/72-02/28/78	FY78: $8,936	TOTAL: $140,045
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bartman, F. L.	HQ-SL/Donn, B. D. HQ-SL/Brunk, W. E.	31-Atmos Sci

NSG 1243 **University of Michigan - Ann Arbor** **2606**
Rain scavenging of solid rocket motor exhaust clouds

Period	*Obligations*	
10/01/75-03/31/79	FY78: $60,000	TOTAL: $211,261
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Dingle, A. N.	LARC/Pellett, G. L.	31-Atmos Sci

NSG 1306 **University of Michigan - Ann Arbor** **2607**
Models and techniques for evaluating the effectiveness of aircraft computing systems

Period	*Obligations*	
05/01/76-05/31/79	FY78: $35,000	TOTAL: $173,865
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Meyer, J. F.	LARC/Migneault, G. E.	45-Elec Engr

NSG 1326 **University of Michigan - Ann Arbor** **2608**
Study of shock boundary layer interaction in transonic flow

Period	*Obligations*	
08/01/76-07/31/79	FY78: $30,000	TOTAL: $75,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Adamson, T. C., Jr.	LARC/Czarnecki, K. R.	41-Aero Engr
Sichel, M.		
Messiter, A. F.		

NSG 1373 **University of Michigan - Ann Arbor** **2609**
Halogen occultation experiment, phases I and II

Period	*Obligations*	
12/01/76-12/31/78	FY78:	TOTAL: $44,264
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Drayson, S. R.	LARC/Russell, J. M., III	31-Atmos Sci
Cicerone, R. J.	LARC/Brockman, P.	

NSG 1448 **University of Michigan - Ann Arbor** **2610**
Trajectories optimization in hypersonic flight

Period	*Obligations*	
09/01/77-08/31/79	FY78: $27,989	TOTAL: $57,016
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Vinh, N. X.	LARC/Dunning, R. S.	41-Aero Engr
	LARC/Elliott, J. R.	

NSG 1482 **University of Michigan - Ann Arbor** **2611**
Application of earth's albedo measurements to climate studies

Period	*Obligations*	
01/01/78-04/30/79	FY78: $29,300	TOTAL: $29,300
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bartman, F. L.	LARC/Smith, G. L.	31-Atmos Sci
	LARC/Suttles, J. T.	

NSG 1494 **University of Michigan - Ann Arbor** **2612**
Analysis and prediction of dynamic aircraft tire data from static measurements

Period	*Obligations*	
03/01/78-02/28/79	FY78: $25,080	TOTAL: $25,080
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Clark, S. K.	LARC/McCarty, J. L.	41-Aero Engr
	LARC/Tanner, J. A.	

NSG 2018 **University of Michigan - Ann Arbor** **2613**
Graduate research aeronautics program

Period	*Obligations*	
04/01/74-01/31/79	FY78: $55,909	TOTAL: $250,671
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kroeger, R. A.	ARC/Feistel, T. W.	41-Aero Engr

NSG 2113 **University of Michigan - Ann Arbor** **2614**
Improvement of light aircraft propulsion efficiency

Period	*Obligations*	
10/01/75-03/31/79	FY78: $72,800	TOTAL: $294,550
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kroeger, R. A.	ARC/Anderson, S. B.	41-Aero Engr
Eagle, D.		

NSG 2245 **University of Michigan - Ann Arbor** **2615**
Math modeling and computer mechanization for real time simulation of rotary-wing aircraft

Period	*Obligations*	
06/01/77-03/31/79	FY78:	TOTAL: $75,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Howe, R. M.	ARC/Alderette, T.	41-Aero Engr
Greenwood, D. T.	ARC/Raby, J. S.	
Fogarty, L. E.		

NSG 2333 **University of Michigan - Ann Arbor** **2616**
Crash-impact fire of fiber reinforced composites

Period	*Obligations*	
08/15/78-08/15/79	FY78: $35,387	TOTAL: $35,387
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Springer, G. S.	ARC/Fish, R. H.	49-Engr, NEC
	ARC/Mansfield, J. A.	

NSG 3148 **University of Michigan - Ann Arbor** **2617**
Fundamental aspects of gas turbine combustion

Period	*Obligations*	
05/01/77-04/30/79	FY78: $67,247	TOTAL: $132,310
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Nicholls, J. A.	LERC/Cooper, L. P.	41-Aero Engr

NSG 3161 **University of Michigan - Ann Arbor** **2618**
Ignition and combustion low compression ratio, high output diesel

Period	*Obligations*	
10/01/77-12/31/78	FY78:	TOTAL: $84,953
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bolt, J. A.	LERC/Beam, L. W.	46-Mech Engr
Mirsky, W., Sr.	LERC/Wintucky, W. T.	

NSG 3165 **University of Michigan - Ann Arbor** **2619**
A study of local parameters affecting emissions from gas turbine engines

Period	*Obligations*	
11/01/77-11/01/79	FY78: $70,605	TOTAL: $70,605
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kauffman, C. W.	LERC/Ercegovic, D. E.	41-Aero Engr

NSG 3192 **University of Michigan - Ann Arbor** **2620**
Morphology of Kevlar fibers

Period	*Obligations*	
04/10/78-04/02/79	FY78: $30,000	TOTAL: $30,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Yeh, G. S.	LERC/Lauver, R. W.	47-Materials Engr

NSG 5139 **University of Michigan - Ann Arbor** **2621**
Search for hot spots at the foot of Io-associated flux tube in Jupiter

Period	*Obligations*	
12/01/76-11/30/77	FY78:	TOTAL: $3,669
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Atreya, S. K.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5171 **University of Michigan - Ann Arbor** **2622**
Studies of odd nitrogen in the mesosphere and lower thermosphere

Period	*Obligations*	
04/01/77-07/31/79	FY78: $30,000	TOTAL: $60,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rusch, D. W.	GSFC/Stolarski, R. S.	31-Atmos Sci

NSG 5189 **University of Michigan - Ann Arbor** **2623**
Direct measurements of photolysis rates of stratospheric constituents

Period	*Obligations*	
08/01/77-07/31/79	FY78: $48,000	TOTAL: $96,604
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Stedman, D. H.	GSFC/Reed, E. I.	31-Atmos Sci

NSG 5206 **University of Michigan - Ann Arbor** **2624**
Measurement of vertical distribution of stars

Period	*Obligations*	
09/01/77-08/31/78	FY78:	TOTAL: $13,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Donahue, T. M.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5232 **University of Michigan - Ann Arbor** **2625**
Search of hot spots at the foot of Io associated flux tube in Jupiter

Period	*Obligations*	
02/19/78-02/18/79	FY78: $3,200	TOTAL: $3,200
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Atreya, S. K.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5281 **University of Michigan - Ann Arbor** **2626**
Interactions of precipitating electrons with the ionosphere using characteristic spectral parameters

Period	*Obligations*	
07/01/78-06/30/79	FY78: $24,733	TOTAL: $24,733
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fontheim, E. G. Ong, R. S.	GSFC/Spencer, N. W.	31-Atmos Sci

NSG 5282 **University of Michigan - Ann Arbor** **2627**
Chemical and dynamics processing at high latitudes

Period	*Obligations*	
07/01/78-06/31/79	FY78: $22,322	TOTAL: $22,322
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Nagy, A. F. Banks, P. M.	GSFC/Spencer, N. W.	31-Atmos Sci

NSG 7187 **University of Michigan - Ann Arbor** **2628**
Theoretical and numerical studies of stratospheric chemistry and radiation

Period	*Obligations*	
10/01/75-09/30/77	FY78:	TOTAL: $107,570
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cicerone, R. J. Liu, S. C.	HQ-ST/Tilford, S. G. HQ-ST/Reed, E. I.	12-Chemistry

NSG 7209 **University of Michigan - Ann Arbor** **2629**
A program of stratospheric research

Period	*Obligations*	
01/01/76-09/30/78	FY78: $198,985	TOTAL: $396,976
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Donahue, T. M. Cicerone, R. J. Boyd, J. P.	HQ-ST/Tilford, S. G. HQ-ST/Simon, N. K.	31-Atmos Sci

NSG 7279 **University of Michigan - Ann Arbor** **2630**
Analysis of OGO-6 photometer data

Period	*Obligations*	
09/01/76-08/31/77	FY78:	TOTAL: $15,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Donahue, T. M.	HQ-SL/Fellows, R. F. HQ-SL/Brunk, W. E.	31-Atmos Sci

NSG 7308 **University of Michigan - Ann Arbor** **2631**
The physical and chemical properties of the prebiotic atmosphere

Period	*Obligations*	
02/01/77-01/31/79	FY78: $24,960	TOTAL: $49,106
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kuhn, W. R.	HQ-SB/Young, R. S.	31-Atmos Sci

NSG 7404 **University of Michigan - Ann Arbor** **2632**
A program for research in planetary atmospheres

Period	*Obligations*	
10/01/77-09/30/78	FY78: $58,936	TOTAL: $58,936
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Atreya, S. K.	HQ-SL/Dwornik, S. E. HQ-SL/Boyce, J. M.	31-Atmos Sci

NSG 7452 **University of Michigan - Ann Arbor** **2633**
Bio-chirality search with variable helicity positrons

Period	*Obligations*	
07/01/78-06/30/79	FY78: $20,000	TOTAL: $20,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rich, A.	HQ-SB/Young, R. S.	51-Biology

NSG 9047 **University of Michigan - Ann Arbor** **2634**
Investigation of otoconial seeding, growth, maintenance and turnover

Period	*Obligations*	
11/01/76-10/31/78	FY78: $41,000	TOTAL: $82,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ross, M. D.	HQ-SB/Halstead, T. W.	51-Biology

NSG 1330 **Wayne State University** **2635**
Analytical modeling of noise source in a moving jet

Period	*Obligations*	
08/17/76-09/30/78	FY78: $11,928	TOTAL: $22,161
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Chow, P. L.	LARC/Maestrello, L. LARC/Liu, C. H.	41-Aero Engr

NSG 2008 **Wayne State University** **2636**
Mathematical models of in vivo measurement of human ulnar strength

Period	*Obligations*	
02/01/74-09/30/78	FY78: $14,500	TOTAL: $75,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Orne, D.	ARC/Young, D. R.	53-Other Medical

MINNESOTA

NSG 5285 **Augsburg College** **2637**
Analysis of long-term density variations of atomic nitrogen

Period	*Obligations*	
07/01/78-06/30/79	FY78: $18,520	TOTAL: $18,520
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Engebretson, M. J.	GSFC/Spencer, N. W.	31-Atmos Sci

NAS 5-23557 **Concordia College in Moorhead** **2638**
Post flight calibration study on the lunar ejecta and meteorite experiment

Period	*Obligations*	
06/14/76-06/01/77	FY78:	TOTAL: $35,012
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bailey, C. F.	GSFC/Berg, O. E.	11-Astronomy
Frantsvog, D. J.		

NAS 2-8812 **Univ of Minnesota - Minneapolis-St Paul** **2639**
Design and development of the bus neutral mass spectrometer

Period	*Obligations*	
06/17/75-11/30/78	FY78: $9,000	TOTAL: $32,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Nier, A. O.	ARC/Thorley, G. W.	31-Atmos Sci
Mauersberger, K.	ARC/Sperans, J.	

NAS 5-11310 **Univ of Minnesota - Minneapolis-St Paul** **2640**
Ac electric fields experiment Helios

Period	*Obligations*	
06/29/70-03/15/79	FY78: $37,500	TOTAL: $1,469,055
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kellogg, P. J.	GSFC/Gemmell, J. D.	11-Astronomy

NAS 5-11438 **Univ of Minnesota - Minneapolis-St Paul** **2641**
Open source neutral mass spectrometers for AE spacecraft, missions C, D, & E

Period	*Obligations*	
06/15/71-09/30/79	FY78: $55,000	TOTAL: $1,234,731
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Nier, A. O.	GSFC/Spencer, N. W.	31-Atmos Sci
	GSFC/Kupperian, J. E., Jr.	

NAS 5-23684 **Univ of Minnesota - Minneapolis-St Paul** **2642**
Experiment definition and integration study of adapting a present cosmic ray detector for Spacelab

Period	*Obligations*	
08/05/76-12/17/76	FY78:	TOTAL: $24,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Waddington, C. J.	GSFC/Barrowman, J. S.	11-Astronomy

NAS 5-23703 **Univ of Minnesota - Minneapolis-St Paul** **2643**
ATS-6 environmental measurements experiment data reduction and analysis

Period	*Obligations*	
11/15/76-11/30/78	FY78: $30,000	TOTAL: $103,335
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Winckler, J. R.	GSFC/Wende, C. D.	31-Atmos Sci

NAS 5-25151 **Univ of Minnesota - Minneapolis-St Paul** **2644**
Interim study report for the plasma wave receivers for the solar polar mission

Period	*Obligations*	
08/01/78-12/31/78	FY78: $35,624	TOTAL: $35,624
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kellogg, P. J.	GSFC/Stone, R. G.	11-Astronomy
Monson, S.		

NAS 8-27977 **Univ of Minnesota - Minneapolis-St Paul** **2645**
Design, development, & operation of Cerenkov portion of the ACR-7 heavy nuclei experiment under the HEAO program

Period	*Obligations*	
06/16/72-09/30/80	FY78: $157,000	TOTAL: $1,267,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Waddington, C. J.	MSFC/Talley, D.	11-Astronomy

NAS 9-12560 **Univ of Minnesota - Minneapolis-St Paul** **2646**
Storage stability & improvement of intermediate moisture foods

Period	*Obligations*	
03/23/72-02/28/78	FY78: $15,000	TOTAL: $280,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mitchell, J. R.	JSC/Smith, M. C., Jr.	59-Life Sci, NEC

NGL 24-005-009 **Univ of Minnesota - Minneapolis-St Paul** **2647**
Development and application of mass spectrometers to studies of earths upper atmosphere and planetary atmospheres

Period	*Obligations*	
08/01/62-06/30/80	FY78: $115,000	TOTAL: $1,622,479
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Nier, A. O.	HQ-SL/Donn, B. D.	31-Atmos Sci
	HQ-SL/Mitz, M. A.	

NGL 24-005-225 **Univ of Minnesota - Minneapolis-St Paul** **2648**
Lunar sample analysis

Period	*Obligations*	
01/26/71-01/31/79	FY78: $118,500	TOTAL: $715,580
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Pepin, R. O.	JSC/Harris, J. W.	13-Physics
Alexander, E. C., Jr.		

NGL 24-005-263 Univ of Minnesota - Minneapolis-St Paul 2649
Study of Minnesota forests and lakes using data from earth resources technology satellites

Period	Obligations	
07/06/72-06/30/80	FY78:	TOTAL: $430,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Shepherd, W. G.	HQ-ET/Vitale, J. A.	39-Env Sci, NEC

NGR 24-005-050 Univ of Minnesota - Minneapolis-St Paul 2650
Measurement of the gamma ray flux of various celestial point sources from high altitude balloons

Period	Obligations	
04/21/65-06/30/79	FY78: $60,000	TOTAL: $858,887
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Waddington, C. J.	HQ-SC/Sofia, S.	11-Astronomy
Freier, P. S.	HQ-SC/Opp, A. G.	

NGR 24-005-223 Univ of Minnesota - Minneapolis-St Paul 2651
Lunar sample analysis

Period	Obligations	
05/22/71-01/31/79	FY78: $106,500	TOTAL: $643,675
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Murthy, V. R.	JSC/Harris, J. W.	13-Physics

NGR 24-005-248 Univ of Minnesota - Minneapolis-St Paul 2652
Lunar sample analysis

Period	Obligations	
08/03/71-01/31/79	FY78:	TOTAL: $372,045
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Banerjee, S. K.	JSC/Harris, J. W.	32-Geological Sci

NGT 24-005-078 Univ of Minnesota - Minneapolis-St Paul 2653
Training of predoctoral graduate students in space sciences and technology

Period	Obligations	
06/24/65-08/01/78	FY78:	TOTAL: $18,298
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Anderson, G. W.	HQ-LU/Carter, C. H.	99-Multi-Discip

NSG 1431 Univ of Minnesota - Minneapolis-St Paul 2654
Neutral constituent measurements in the stratosphere

Period	Obligations	
07/01/77-06/30/79	FY78: $97,277	TOTAL: $209,740
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mauersberger, K.	LARC/Beswick, A. G.	31-Atmos Sci

NSG 2014 Univ of Minnesota - Minneapolis-St Paul 2655
Exploratory astrophysics and infrared astronomy

Period	Obligations	
02/01/74-02/28/79	FY78: $70,000	TOTAL: $305,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ney, E.	HQ-SC/Boggess, N. W.	11-Astronomy
	HQ-SC/Roman, N. G.	

NSG 2316 Univ of Minnesota - Minneapolis-St Paul 2656
A panel method based on localized splines

Period	Obligations	
06/16/78-06/15/79	FY78: $16,603	TOTAL: $16,603
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Moran, J. P.	ARC/Erickson, L. L.	41-Aero Engr
Cole, K.		

NSG 3041 Univ of Minnesota - Minneapolis-St Paul 2657
Ion beam sputter etch and deposition study

Period	Obligations	
01/01/75-03/01/79	FY78: $35,000	TOTAL: $169,385
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wehner, G. K.	LERC/Sovey, J. S.	13-Physics
	LERC/Terdan, F. F.	

NSG 3094 Univ of Minnesota - Minneapolis-St Paul 2658
Investigations of negative and positive cesium ion species

Period	Obligations	
02/01/76-10/31/78	FY78:	TOTAL: $92,350
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Chanin, L. M.	LERC/Morris, J. F.	19-Phys Sci, NEC

NSG 5088 Univ of Minnesota - Minneapolis-St Paul 2659
Magnetospheric physics phenomena using sounding rockets

Period	Obligations	
11/01/75-11/30/78	FY78: $99,966	TOTAL: $299,593
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Winckler, J. R.	GSFC/Bissell, E. E.	13-Physics
	HQ-ST/Cauffman, D. P.	

NSG 5237 Univ of Minnesota - Minneapolis-St Paul 2660
Investigation of interstellar carbon

Period	Obligations	
03/01/78-02/28/79	FY78: $16,000	TOTAL: $16,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Black, J. H.	GSFC/Boggess, A.	11-Astronomy
	GSFC/West, D. K.	

NSG 6005 Univ of Minnesota - Minneapolis-St Paul 2661
Investigations of electrical currents in the auroral ionosphere

Period	Obligations	
10/01/75-12/31/78	FY78:	TOTAL: $194,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Arnoldy, R. J.	WFC/Ballance, C. W., Jr.	
Cahill, L. J., Jr.	WFC/Gray, J. W.	19-Phys Sci, NEC

NSG 6009 Univ of Minnesota - Minneapolis-St Paul 2662
Study of neutral composition of upper atmosphere with rocket-borne mass spectrometers

Period	Obligations	
07/01/75-06/30/79	FY78: $100,000	TOTAL: $126,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Nier, A. O.	WFC/Gray, J. W.	19-Phys Sci, NEC

MINNESOTA (Continued)

NSG 6021 **Univ of Minnesota - Minneapolis-St Paul** **2663**
Rocket study of auroral processes

Period	*Obligations*	
06/01/78-05/31/79	FY78: $101,398	TOTAL: $101,398
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cahill, L. J., Jr.	WFC/Gray, J. W. WFC/Pless, R. H.	19-Phys Sci, NEC

NSG 7005 **Univ of Minnesota - Minneapolis-St Paul** **2664**
Energetic particles in the magnetosphere and space

Period	*Obligations*	
07/01/73-09/30/80	FY78: $175,000	TOTAL: $837,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Winckler, J. R.	HQ-ST/King, J. H. HQ-ST/Schmerling, E. R.	39-Env Sci, NEC

NSG 7108 **Univ of Minnesota - Minneapolis-St Paul** **2665**
Research of waves and fields in plasma

Period	*Obligations*	
12/01/74-06/30/78	FY78:	TOTAL: $50,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kellogg, P. J.	HQ-ST/Taylor, W. L.	19-Phys Sci, NEC

NSG 7221 **Univ of Minnesota - Minneapolis-St Paul** **2666**
Neutral constituent measurements in stratosphere

Period	*Obligations*	
03/16/76-11/30/78	FY78: $25,000	TOTAL: $88,243
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mauersberger, K. Nier, A. O.	HQ-ST/Seals, R. K., Jr. HQ-ST/Tilford, S. G.	31-Atmos Sci

NSG 7237 **Univ of Minnesota - Minneapolis-St Paul** **2667**
Interpretation of data obtained with the Explorer 45 spacecraft: Major objective is understanding of magnetic storms

Period	*Obligations*	
06/01/76-03/31/79	FY78: $35,000	TOTAL: $72,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cahill, L. J., Jr.	HQ-ST/Cauffman, D. P. HQ-ST/Schmerling, E. R.	19-Phys Sci, NEC

NSG 7259 **Univ of Minnesota - Minneapolis-St Paul** **2668**
Ultraviolet observations of SO galaxies

Period	*Obligations*	
08/01/76-01/31/78	FY78:	TOTAL: $1,861
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gallagher, J. S.	HQ-SC/Roman, N. G. HQ-SC/Rosendhal, J. D.	11-Astronomy

NSG 7296 **Univ of Minnesota - Minneapolis-St Paul** **2669**
Triaxial drop shapes rotating and charged liquid drops

Period	*Obligations*	
12/15/76-12/15/78	FY78: $31,688	TOTAL: $60,588
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Scriven, L. E.	HQ-RR/Lundholm, J. G., Jr. JPL/Saffren, M. M.	13-Physics

NSG 9050 **Univ of Minnesota - Minneapolis-St Paul** **2670**
Petrologic study of returned lunar samples

Period	*Obligations*	
02/01/77-01/31/79	FY78: $14,000	TOTAL: $51,300
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Weiblen, P. W.	JSC/Harris, J. W.	32-Geological Sci

NSR 24-005-245 **Univ of Minnesota - Minneapolis-St Paul** **2671**
Study of the proper motion of stars using the automated proper motion system

Period	*Obligations*	
01/13/72-12/31/77	FY78:	TOTAL: $238,329
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Luyten, W. J.	HQ-SC/Roman, N. G. GSFC/Mead, J. M.	11-Astronomy

MISSISSIPPI

NGR 25-012-001 **Alcorn State University** **2672**
Radio tracking of geostationary satellites

Period	*Obligations*	
09/01/73-01/31/79	FY78: $28,621	TOTAL: $184,238
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Paul, M. P.	GSFC/Schmid, P. E.	31-Atmos Sci

NSG 8036 **Alcorn State University** **2673**
Bio-gas production from alligator weeds

Period	*Obligations*	
06/01/76-08/31/79	FY78: $22,132	TOTAL: $65,161
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Latif, A.	NSTL/Wolverton, B. C.	51-Biology

NSG 3004 **Jackson State University** **2674**
Numerical solution of Navier-Stokes equations for steady laminar incompressible flow between two plates with abrupt change of spacings

Period	*Obligations*	
03/01/74-09/30/78	FY78:	TOTAL: $93,183
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Chu, C. S.	LERC/Anderson, W. J. HQ-R/Zuk, J.	49-Engr, NEC

NSG 8026 **Jackson State University** **2675**
Aquatic plants as filtration systems for chlorinated hydrocarbons

Period	*Obligations*	
06/01/75-05/31/79	FY78: $27,291	TOTAL: $103,380
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Shore, F.	NSTL/Wolverton, B. C. NSTL/Estess, R.	39-Env Sci, NEC

NSG 9016 **Jackson State University** **2676**
Research in marshland ecology

Period	*Obligations*	
08/15/74-12/31/78	FY78: $3,529	TOTAL: $76,541
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Nelson, F. R.	NSTL/Joyce, A. T.	39-Env Sci, NEC

NAS 8-26749 **Mississippi State University** **2677**
A study of trends and techniques for space base electronics

Period	*Obligations*	
01/12/71-03/10/79	FY78: $60,000	TOTAL: $200,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Trotter, D.	MSFC/Hollis, B. R., Jr.	13-Physics

NAS 8-31373 **Mississippi State University** **2678**
Study of digital holographic filter generation

Period	*Obligations*	
03/20/75-12/31/78	FY78: $8,000	TOTAL: $28,024
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ingels, F. M.	MSFC/Wallace, G. R.	45-Elec Engr
	MSFC/McDonough, G. F.	

NAS 8-31770 **Mississippi State University** **2679**
Heat shield model fluctuating pressure test and full scale design requirements

Period	*Obligations*	
12/15/75-03/31/77	FY78:	TOTAL: $20,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Shepard, W. S.	MSFC/Clever, W. W.	41-Aero Engr

NAS 8-32810 **Mississippi State University** **2680**
Development of a computerized algorithm for establishing harmonic balance

Period	*Obligations*	
01/01/78-04/30/79	FY78: $30,031	TOTAL: $30,031
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mitchell, J. R.	MSFC/Hendrix, N. D.	
Barror, O. L.	MSFC/Mink, H. J.	22-Computer Science

NAS 8-32912 **Mississippi State University** **2681**
Develop a computer program to compute the flow field, aerodynamic forces and heating rate of arbitrary shaped bodies

Period	*Obligations*	
05/25/78-05/24/79	FY78: $48,787	TOTAL: $48,787
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Thompson, J. F.	MSFC/Sims, J. L.	49-Engr, NEC
	MSFC/Donehoo, L. K.	

NCA 8-131 **Mississippi State University** **2682**
Design of mechanism for referencing rear drum of long wall shearer

Period	*Obligations*	
01/11/78-07/10/78	FY78: $4,800	TOTAL: $4,800
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Jones, E. W.	MSFC/Broussard, P. H.	46-Mech Engr
	MSFC/Kent, M. I.	

NGL 25-001-054 **Mississippi State University** **2683**
Application of remotely sensed data to state and regional problems

Period	*Obligations*	
11/01/73-10/31/80	FY78: $100,000	TOTAL: $600,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Miller, W. F.	HQ-ET/Vitale, J. A.	39-Env Sci, NEC

NGR 25-001-055 **Mississippi State University** **2684**
Numerical solution of the Navier-Stokes equations for arbitrary two-dimensional multi-element airfoils

Period	*Obligations*	
01/01/74-02/28/79	FY78: $29,841	TOTAL: $145,462
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Thompson, J. F.	LARC/South, J. C., Jr.	41-Aero Engr

NSG 1083 **Mississippi State University** **2685**
An exploratory investigation of the cooling drag associated with general aviation propulsive systems

Period	*Obligations*	
09/01/74-02/28/79	FY78:	TOTAL: $225,959
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cross, E. J., Jr.	LARC/Hall, A. W.	41-Aero Engr
Miley, S. J.	LARC/Judd, J. H.	

NSG 1249 **Mississippi State University** **2686**
Flight test of a wing stall sensor and evaluation of its application to an aircraft stall deterrent system

Period	*Obligations*	
09/15/75-12/31/78	FY78: $77,234	TOTAL: $157,764
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bennett, A. G., Jr.	LARC/Stewart, E. C.	41-Aero Engr
Owens, J. K.		

NSG 1375 **Mississippi State University** **2687**
Processing air quality data

Period	*Obligations*	
01/01/77-03/31/78	FY78:	TOTAL: $19,240
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Butler, C. M.	LARC/Hogge, J.E.	22-Computer Science

NSG 1402 **Mississippi State University** **2688**
Propeller propulsion integration

Period	*Obligations*	
04/01/77-11/30/78	FY78: $66,788	TOTAL: $86,662
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cross, E. J., Jr.	LARC/McLemore, H. C.	41-Aero Engr
Miley, S. J.		

NSG 1454 **Mississippi State University** **2689**
Investigation of a flight test method for determining airplane drag utilizing a propeller wake survey rake

Period	*Obligations*	
09/01/77-11/30/79	FY78:	TOTAL: $13,622
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cross, E. J., Jr.	LARC/Judd, J. H.	41-Aero Engr
Miley, S. J.		

MISSISSIPPI (Continued)

NSG 1511 **Mississippi State University** **2690**
Full scale flow visualization for agricultural aircraft

Period	*Obligations*	
04/01/78-03/31/79	FY78: $30,000	TOTAL: $30,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cross, E. J., Jr.	LARC/Holmes, B. J.	41-Aero Engr

NSG 1539 **Mississippi University For Women** **2691**
Polyimide model compounds

Period	*Obligations*	
06/15/78-06/14/79	FY78: $6,908	TOTAL: $6,908
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Pratt, J. R.	LARC/Young, P. R. LARC/Johnston, N. J.	12-Chemistry

NAS 8-32218 **University of Mississippi - University** **2692**
Planning for a center for information, education and technology development in remote sensing

Period	*Obligations*	
12/01/76-10/31/78	FY78:	TOTAL: $8,795
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Walsh, D. E. Minshew, V. H.	MSFC/Paludan, C. T. MSFC/Downs, S. W., Jr.	32-Geological Sci

NAS13-54 **University of Southern Mississippi** **2693**
Effects of water hyacinth substances upon the growth of yeast of the genus candida

Period	*Obligations*	
01/14/77-10/14/77	FY78:	TOTAL: $5,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Stocks, P. K.	NSTL/Wolverton, B. C.	51-Biology

NAS13-81 **University of Southern Mississippi** **2694**
Evaluate the nutritional value of 'single cell protein' using water hyacinth extracts as subrate study

Period	*Obligations*	
03/20/78-09/19/79	FY78: $10,000	TOTAL: $10,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Stocks, P. K.	NSTL/Wolverton, B. C.	39-Env Sci, NEC

NAS13-95 **University of Southern Mississippi** **2695**
Demonstration and evaluation of EMS telemetry capability in remote areas using synchronous satellite communications technology

Period	*Obligations*	
07/17/78-09/16/78	FY78: $19,865	TOTAL: $19,865
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Brundage, W. G. Burge, C. D.	NSTL/Hopkins, W. L.	49-Engr, NEC

NSG 1515 **University of Southern Mississippi** **2696**
Deconvolution of gas chrometographic data

Period	*Obligations*	
04/01/78-03/31/79	FY78: $4,689	TOTAL: $4,689
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rayborn, G. H. Hughes, W. E.	LARC/Wood, G. M.	19-Phys Sci, NEC

MISSOURI

NAS 8-32838 **Saint Louis University** **2697**
Study of local storm convection

Period	*Obligations*	
03/20/78-03/19/79	FY78: $19,997	TOTAL: $19,997
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fuelberg, H. E.	MSFC/Hill, C. K. MSFC/Turner, R. E.	31-Atmos Sci

NAS 5-20818 **University of Missouri - Columbia** **2698**
Applications of airborne lidar measurement study

Period	*Obligations*	
01/29/75-07/31/78	FY78:	TOTAL: $60,096
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Schuster, B. G.	GSFC/Curran, R. J.	31-Atmos Sci

NAS 8-31150 **University of Missouri - Columbia** **2699**
Research study of microphysical processes in atmospheric clouds

Period	*Obligations*	
02/11/75-12/15/78	FY78: $50,000	TOTAL: $116,488
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Plummer, P. L. Hale, B. N.	MSFC/Smith, R. E.	31-Atmos Sci

NAS 8-31767 **University of Missouri - Columbia** **2700**
Application transfer activity in Missouri

Period	*Obligations*	
01/05/76-09/30/78	FY78:	TOTAL: $44,200
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hadlock, F. O. Johannsen, C. J.	MSFC/Paludan, C. T. MSFC/Daniels, J. L., Jr.	39-Env Sci, NEC

NAS 8-31849 **University of Missouri - Columbia** **2701**
Cloud physics laboratory science simulator

Period	*Obligations*	
04/29/76-10/31/79	FY78: $30,000	TOTAL: $269,958
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kassner, J. L., Jr.	MSFC/Smith, R. E. MSFC/Anderson, B. J.	31-Atmos Sci

NAS 9-15477 **University of Missouri - Columbia** **2702**
Development and verification of simulation models for analyzing orbiter digital communications and data links

Period	*Obligations*	
01/01/78-12/31/79	FY78: $25,000	TOTAL: $25,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Tranter, W. H.	JSC/Eggleston, T. W.	45-Elec Engr

NCA 2-450604 **University of Missouri - Columbia** **2703**
Investigation of measurement errors in laser Doppler anemometer systems

Period	*Obligations*	
06/01/76-12/31/78	FY78:	TOTAL: $11,710
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Miles, J. B.	ARC/Johnson, D. A.	45-Elec Engr

NCA 2-450802 **University of Missouri - Columbia** **2704**
Investigation of nucleate boiling in normal and reduced gravity environments

Period	*Obligations*	
07/01/78-07/01/79	FY78: $9,455	TOTAL: $9,455
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Miles, J. B.	ARC/Webbon, B. W.	46-Mech Engr

NSG 1540 **University of Missouri - Columbia** **2705**
Study of stochastic processes occuring in the reliability analysis of fault-tolerant avionics computing systems

Period	*Obligations*	
08/15/78-05/14/79	FY78: $17,928	TOTAL: $17,928
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Miller, D. R.	LARC/Migneault, G. E.	22-Computer Science
	LARC/Lupton, A. O.	

NSG 2193 **University of Missouri - Columbia** **2706**
Electrochemical carbon oxide concentration using molten-salt electrolytes

Period	*Obligations*	
11/01/76-10/30/79	FY78: $22,000	TOTAL: $33,200
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Winnick, J.	ARC/Quattrone, P. D.	59-Life Sci, NEC

NAS 8-32976 **University of Missouri - Rolla** **2707**
Monodisperse cloud experiment

Period	*Obligations*	
04/03/78-12/31/81	FY78: $35,000	TOTAL: $35,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hagen, D. E.	MSFC/Fallon, R. A.	31-Atmos Sci
Kassner, J. L., Jr.	MSFC/Smith, R. E.	
White, D. R.		

NAS 9-14848 **University of Missouri - Rolla** **2708**
Development and verification of simulation models for analyzing orbiter digital communication and data links and onboard monitoring parameter correlations

Period	*Obligations*	
01/01/76-11/30/77	FY78:	TOTAL: $29,600
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Tranter, W. H.	JSC/Dawson, C. T.	45-Elec Engr

NCA 2-450801 **University of Missouri - Rolla** **2709**
Prediction of buffet response of 1/6 scale models of F-111 tact wings

Period	*Obligations*	
10/01/77-12/31/78	FY78: $8,982	TOTAL: $8,982
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cronin, D. L.	ARC/Coe, C. F.	41-Aero Engr

NSG 1050 **University of Missouri - Rolla** **2710**
Structural-acoustic response and interior noise levels of fuselage structures

Period	*Obligations*	
09/01/74-08/31/78	FY78: $1,677	TOTAL: $91,102
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Koval, L. R.	LARC/Mixson, J. S.	41-Aero Engr

NSG 1369 **University of Missouri - Rolla** **2711**
Transport properties in the atmosphere of Jupiter

Period	*Obligations*	
01/01/77-12/31/78	FY78:	TOTAL: $17,917
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Biolsi, L.	LARC/Graves, R. A., Jr.	12-Chemistry
	LARC/Jones, J. J.	

NSG 1452 **University of Missouri - Rolla** **2712**
Study of gas-solid airflow over a flat plate

Period	*Obligations*	
10/01/77-11/30/79	FY78: $70,230	TOTAL: $70,230
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Patterson, G. K.	LARC/Hefner, J. N.	41-Aero Engr
Oetting, R. B.	LARC/Bushnell, D. M.	

NSG 3113 **University of Missouri - Rolla** **2713**
Theoretical study of starved elastohydrodynamic lubrication of line contacts with a detailed treatment of inlet and exit flow regions

Period	*Obligations*	
07/01/76-12/30/78	FY78:	TOTAL: $29,234
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Medrow, R. A.	LERC/Wedeven, L. D.	46-Mech Engr

NSG 3199 **University of Missouri - Rolla** **2714**
Nucleate boiling from ion-beam textured surfaces coated with plasma deposited polymers

Period	*Obligations*	
06/15/78-06/15/79	FY78: $15,366	TOTAL: $15,366
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Yasuda, H. K.	LERC/Weigand, A. J.	19-Phys Sci, NEC
Park, E. L.	LERC/Banks, B. A.	

NSG 8055 **University of Missouri - Rolla** **2715**
Coal interface detection

Period	*Obligations*	
09/01/77-09/30/78	FY78:	TOTAL: $23,801
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Summers, D. A.	MSFC/Geller, G.	47-Materials Engr
Barker, C. R.		

NSG 5151 **University of Missouri - Saint Louis** **2716**
Observations of ultraviolet emission lines in gaseous nebulae

Period	*Obligations*	
01/01/77-12/31/78	FY78:	TOTAL: $1,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Schwartz, R. D.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NAS 1-13889 **Washington University** **2717**
Viking/Lander imaging studies
Period *Obligations*
05/05/75-09/30/78 FY78: $85,692 TOTAL: $198,393
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Arvidson, R. E. LARC/Williams, T. S., Jr.
LARC/Glenny, W. R. 39-Env Sci, NEC

NAS 8-27976 **Washington University** **2718**
Design, development and operation of a heavy nuclei experiment under the HEAO program
Period *Obligations*
06/16/72-09/30/80 FY78: $75,000 TOTAL: $440,754
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Israel, M. H. MSFC/Talley, D. 11-Astronomy

NAS 8-32354 **Washington University** **2719**
Data base management applications
Period *Obligations*
01/19/77-05/19/78 FY78: TOTAL: $100,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Eastwood, L. MSFC/Daniels, J. L., Jr.
MSFC/Wallace, G. R. 39-Env Sci, NEC

NGL 26-008-065 **Washington University** **2720**
Lunar sample analysis
Period *Obligations*
02/01/71-01/31/81 FY78: $357,765 TOTAL: $2,462,281
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Walker, R. M. JSC/Harris, J. W. 13-Physics

NGR 26-008-001 **Washington University** **2721**
Determination of characteristics of high altitude primary cosmic radiation at low latitudes
Period *Obligations*
09/01/61-10/31/78 FY78: $126,824 TOTAL: $1,526,540
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Israel, M. H. HQ-SC/Fishman, G. J. 11-Astronomy
Klarmann, J. HQ-SC/Opp, A. G.

NSG 1392 **Washington University** **2722**
Development of ultrasonic techniques for non-destructive evaluation based on Fourier analysis of signals from irregular and inhomogeneous structures
Period *Obligations*
03/15/77-03/31/79 FY78: $44,950 TOTAL: $87,807
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Miller, J. G. LARC/Heyman, J. S. 13-Physics

NSG 2170 **Washington University** **2723**
Benefit-cost evaluation of an intra-regional air service in the bay area
Period *Obligations*
07/01/76-03/31/78 FY78: $39,933 TOTAL: $119,933
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Haefner, L. E. ARC/Mascy, A. C. 41-Aero Engr

NSG 5187 **Washington University** **2724**
Copernicus observations for determinations of abundance of ratios
Period *Obligations*
07/01/77-06/30/78 FY78: TOTAL: $6,400
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Smith, W. H. GSFC/Kupperian, J. E., Jr. 11-Astronomy

NSG 7016 **Washington University** **2725**
Lunar data analysis and synthesis program on lunar surface dynamics
Period *Obligations*
12/01/73-01/31/80 FY78: $51,934 TOTAL: $410,871
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Hohenberg, C. M. HQ-SL/Quaide, W. L. 32-Geological Sci
HQ-SL/French, B. E.

NSG 7087 **Washington University** **2726**
Computerized analysis of Martian crater and aeolian feature data
Period *Obligations*
08/01/74-09/30/78 FY78: $62,355 TOTAL: $138,880
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Arvidson, R. E. HQ-SL/Dwornik, S. E. 32-Geological Sci
HQ-SL/Boyce, J. M.

NSG 7334 **Washington University** **2727**
Planetary observations using a new Fabry-Perot interferometric method
Period *Obligations*
04/01/77-03/31/79 FY78: $73,300 TOTAL: $146,588
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Smith, W. H. HQ-SL/Brunk, W. E. 11-Astronomy
HQ-SL/Quaide, W. L.

NSG 7372 **Washington University** **2728**
Interferometric spectral observations of the interstellar medium in the near ultraviolet
Period *Obligations*
07/01/77-06/30/79 FY78: $26,947 TOTAL: $52,762
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Smith, W. H. HQ-SC/Roman, N. G. 11-Astronomy
HQ-SC/Rosendhal, J. D.

NSG 9055 **Washington University** **2729**
Chemical studies of materials and processes in the lunar regolith and of lunar and terrestrial igneous differentiation
Period *Obligations*
02/01/77-01/31/81 FY78: $240,495 TOTAL: $373,495
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Haskin, L. A. JSC/Harris, J. W. 32-Geological Sci
Blanchard, D. P.

MISSOURI (Continued)

NSG 9073 **Washington University** **2730**
Electrochemical separations for obtaining metals and oxygen from lunar samples

Period *Obligations*
09/01/78-08/31/79 FY78: $24,000 TOTAL: $24,000

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Haskin, L. A. JSC/Williams, R. J. 19-Phys Sci, NEC
Lindstrom, D. J.

MONTANA

NGR 27-001-040 **Montana State University** **2731**
Establishment of a mission-oriented gravitation research center

Period *Obligations*
06/28/71-08/31/78 FY78: $16,554 TOTAL: $163,312

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Nordtvedt, K., Jr. HQ-SC/Roman, N. G. 11-Astronomy
HQ-SC/Rosendhal, J. D.

NSG 8061 **Montana State University** **2732**
Beta decay clock experiment

Period *Obligations*
06/15/78-12/14/78 FY78: $3,442 TOTAL: $3,442

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Nortdvedt, K. MSFC/Eby, P. B. 13-Physics

NAS 5-23891 **University of Montana** **2733**
Data analysis and computer mapping

Period *Obligations*
02/24/77-11/30/78 FY78: $6,000 TOTAL: $22,500

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Craighead, J. J. GSFC/Oseroff, H. 39-Env Sci, NEC

NEBRASKA

NAS 5-22903 **University of Nebraska - Lincoln** **2734**
Calibration of magnetic electron multipliers

Period *Obligations*
01/14/76-07/15/77 FY78: $251 TOTAL: $9,161

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Samson, J. R. GSFC/Kalet, M. W. 13-Physics
GSFC/Neupert, W. M.

NAS 8-31897 **University of Nebraska - Lincoln** **2735**
Investigate problems and establish design specifications for teleoperator manipulator

Period *Obligations*
01/20/76-07/31/78 FY78: $3,500 TOTAL: $69,495

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Kersten, L. MSFC/Johnston, J. D. 46-Mech Engr
MSFC/Burch, J. L.

NGL 28-004-020 **University of Nebraska - Lincoln** **2736**
Applications of remote sensing in resource management in Nebraska

Period *Obligations*
04/20/72-04/30/80 FY78: $100,000 TOTAL: $675,000

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Carlson, M. P. HQ-ET/Vitale, J. A. 39-Env Sci, NEC

NGR 28-004-021 **University of Nebraska - Lincoln** **2737**
Interaction of radiation with planetary gases

Period *Obligations*
02/23/73-01/31/80 FY78: TOTAL: $309,731

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Samson, J. A. HQ-SL/Fellows, R. F. 31-Atmos Sci
HQ-SL/Brunk, W. E.

NGR 28-004-025 **University of Nebraska - Lincoln** **2738**
Study into effects of oxidized titanium on hydrogen transport in titanium at low temperatures

Period *Obligations*
09/01/73-09/30/78 FY78: TOTAL: $94,618

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Johnson, D. L. ARC/Nelson, H. G. 47-Materials Engr

NSG 1506 **University of Nebraska - Lincoln** **2739**
Load deflection characteristics of inflatable structures

Period *Obligations*
03/15/78-11/14/78 FY78: $14,935 TOTAL: $14,935

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Baumgarten, J. R. LARC/Tanner, J. A. 46-Mech Engr

NSG 5245 **University of Nebraska - Lincoln** **2740**
Chromospheres of classic Cepheids

Period *Obligations*
02/15/78-02/14/79 FY78: $1,400 TOTAL: $1,400

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Schmidt, E. G. GSFC/Kupperian, J. E., Jr. 11-Astronomy

NEVADA

NAS 8-31470 **Univ. of Nevada - Desert Res. Inst.** **2741**
Study of zero-gravity atmospheric cloud physics lab chamber development

Period *Obligations*
05/13/75-06/30/78 FY78: TOTAL: $108,790

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Squires, P. MSFC/Smith, R. E. 31-Atmos Sci
MSFC/Schrick, B. J.

NEVADA (Continued)

NAS 8-31776 **Univ. of Nevada - Desert Res. Inst.** **2742**
Conduct preliminary design, development and analysis of a saturator for the atmospheric cloud physics laboratory experiment gas flow

Period	*Obligations*	
02/18/76-09/30/78	FY78: $10,832	TOTAL: $123,573
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kocmond, W. C.	MSFC/Schrick, B. J.	31-Atmos Sci
Keyser, G. E.	MSFC/Smith, R. E.	

NAS 8-32975 **Univ. of Nevada - Desert Res. Inst.** **2743**
Atmospheric cloud physics laboratory cloud forming experiment for the first (ACPL) mission

Period	*Obligations*	
03/01/78-12/31/81	FY78: $148,900	TOTAL: $148,900
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kocmond, W. C.	MSFC/Fallon, R. A.	31-Atmos Sci
Squires, P.	MSFC/Smith, R. E.	

NAS 8-32977 **Univ. of Nevada - Desert Res. Inst.** **2744**
Atmospheric cloud physics laboratory ice crystal growth experiment for mission I

Period	*Obligations*	
03/01/78-12/31/81	FY78: $25,000	TOTAL: $25,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hallett, J.	MSFC/Fallon, R. A.	31-Atmos Sci
	MSFC/Smith, R. E.	

NSG 2140 **University of Nevada - Las Vegas** **2745**
Prediction of unsteady airloads in two dimensional subsonic compressible flow

Period	*Obligations*	
06/01/76-05/31/79	FY78: $27,712	TOTAL: $71,437
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fromme, J. A.	ARC/Davis, S. S.	41-Aero Engr
Goldberg, M. A.		

NAS 8-31441 **University of Nevada - Reno** **2746**
Zero-8 cloud drop coalescence experiment

Period	*Obligations*	
04/21/75-10/31/78	FY78:	TOTAL: $144,149
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Telford, J. W.	MSFC/Smith, R. E.	19-Phys Sci, NEC
	MSFC/Anderson, B. J.	

NAS 8-32313 **University of Nevada - Reno** **2747**
Study to perform preliminary experiments to evaluate particle generation and characterization techniques for zero gravity cloud physics experiments

Period	*Obligations*	
12/13/76-06/30/79	FY78: $51,000	TOTAL: $150,447
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kocmond, W. C.	MSFC/Schrick, B. J.	31-Atmos Sci
	MSFC/Smith, R. E.	

NSG 2291 **University of Nevada - Reno** **2748**
Computations and turbulent flow modeling in support of helicopter rotor technology

Period	*Obligations*	
12/01/77-11/30/78	FY78: $36,326	TOTAL: $36,326
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rose, W. C.	ARC/Presley, L. L.	41-Aero Engr
	ARC/Murphy, J. D.	

NEW HAMPSHIRE

NGR 30-001-041 **Dartmouth College** **2749**
Processing and analysis of data from VLF-LF experiments on the OGO-4 and OGO-6 spacecraft and continuation of studies at ground stations

Period	*Obligations*	
10/02/72-06/30/77	FY78:	TOTAL: $250,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Morgan, M. G.	HQ-ST/Taylor, W. W.	13-Physics
	HQ-ST/Schmerling, W. E.	

NSG 5014 **Dartmouth College** **2750**
Geological applications of ERTS data

Period	*Obligations*	
07/01/74-11/31/78	FY78: $145,000	TOTAL: $884,605
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fox, L.	GSFC/Jastrow, R.	39-Env Sci, NEC
Stoiber, R. E.		
Malmstrom, V.		

NSG 5145 **Dartmouth College** **2751**
Investigation of volcanic gases and dust (aerosols) in the stratosphere

Period	*Obligations*	
12/01/76-11/30/78	FY78: $40,000	TOTAL: $80,291
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Self, S. L.	GSFC/Hansen, J. E.	31-Atmos Sci
Decker, R. W.		

NSG 7292 **Dartmouth College** **2752**
Magnetopause-structure from satellite observations

Period	*Obligations*	
10/01/76-09/30/78	FY78: $20,000	TOTAL: $40,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sonnerup, B.	HQ-ST/King, J. H.	39-Env Sci, NEC
	HQ-ST/Schmerling, E. R.	

NAS 5-23761 **University of New Hampshire** **2753**
Hardware phase of the solar gamma ray experiment for the solar maximum mission

Period	*Obligations*	
10/01/76-09/30/81	FY78: $1,490,211	TOTAL: $2,761,601
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Chupp, E. L.	GSFC/Donley, J. L.	31-Atmos Sci

NAS 5-24328 **University of New Hampshire** **2754**
Data reduction and analysis of the environmental measurement experiment

Period	*Obligations*	
12/01/77-11/30/78	FY78: $45,000	TOTAL: $45,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Arnoldy, R. L.	GSFC/Wende, C. D.	19-Phys Sci, NEC

NAS 5-24354 **University of New Hampshire** **2755**
Analysis and interpretation of Pioneer 10 and 11 data

Period	*Obligations*	
10/16/77-10/15/78	FY78: $22,250	TOTAL: $22,250
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Webber, W. R.	GSFC/Trainor, J. H.	13-Physics

NGL 30-002-018 **University of New Hampshire** **2756**
Investigation of energy levels in foil excited atomic beams

Period	*Obligations*	
03/15/65-09/30/78	FY78: $14,999	TOTAL: $207,354
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Chupp, E. L.	HQ-ST/Bohlin, J. D.	13-Physics

NGL 30-002-021 **University of New Hampshire** **2757**
Investigation and development of techniques for solar neutron and gamma ray detection

Period	*Obligations*	
02/28/66-01/31/79	FY78: $100,000	TOTAL: $1,202,365
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Chupp, E. L.	HQ-SC/Opp, A. G.	11-Astronomy
	HQ-SC/Fishman, G. J.	

NGR 30-002-052 **University of New Hampshire** **2758**
Research program in area of cosmic ray and X-ray astronomy

Period	*Obligations*	
02/12/70-09/30/78	FY78: $110,000	TOTAL: $970,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Webber, W. R.	HQ-SC/Fishman, G. J.	11-Astronomy
	HQ-SC/Opp, A. G.	

NSG 6013 **University of New Hampshire** **2759**
Investigation of electrical currents in the auroral ionosphere

Period	*Obligations*	
07/01/76-12/31/78	FY78:	TOTAL: $147,100
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Arnoldy, R. L.	WFC/Ballance, C. W., Jr.	31-Atmos Sci
	WFC/Gray, J. W.	

NSG 6022 **University of New Hampshire** **2760**
Rocket study of auroral processes

Period	*Obligations*	
05/01/78-04/30/79	FY78: $78,022	TOTAL: $78,022
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Arnoldy, R. L.	WFC/Gray, J. W.	19-Phys Sci, NEC
Kaufmann, R. L.	WFC/Pless, R. H.	

NSG 7411 **University of New Hampshire** **2761**
Theoretical studies in solar particle physics

Period	*Obligations*	
10/01/77-09/30/78	FY78: $25,000	TOTAL: $25,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fisk, L. A.	HQ-ST/Bohlin, J. D.	13-Physics

NEW JERSEY

NAS 1-9705 **Princeton University** **2762**
Participation in the science planning for the Viking 1975 missions in the area of magnetic properties

Period	*Obligations*	
04/03/70-09/30/78	FY78: $17,626	TOTAL: $270,320
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hargraves, R. B.	LARC/Williams, T. S., Jr.	19-Phys Sci, NEC
	LARC/Glenny, W. R.	

NAS 1-13502 **Princeton University** **2763**
In-flight evaluation of decoupler longitudinal controls for a STOL transport aircraft

Period	*Obligations*	
08/19/74-08/15/78	FY78:	TOTAL: $178,945
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sockel, E.	LARC/Miller, G. K.	41-Aero Engr
Ellis, D. R.	LARC/Queijo, M. J.	

NAS 5-1810 **Princeton University** **2764**
Design, development, fabrication, & testing of orbiting astronomical observatory experiment

Period	*Obligations*	
06/08/72-12/01/78	FY78:	TOTAL: $18,200,727
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Spitzer, L., Jr.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NAS 5-20833 **Princeton University** **2765**
Large high resolution integrating TV sensor for astronomical applications

Period	*Obligations*	
10/23/74-08/31/76	FY78:	TOTAL: $473,182
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lowrance, J.	GSFC/Sobieski, S.	11-Astronomy
	GSFC/Kelsall, T.	

NAS 5-22360 **Princeton University** **2766**
Spectroscopy using the one meter ultraviolet optical telescope for Spacelab astronomy missions

Period	*Obligations*	
04/18/75-12/31/78	FY78:	TOTAL: $19,277
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Jenkins, E. B.	GSFC/Wilson, L.	32-Geological Sci

NAS 5-22989 **Princeton University** **2767**
70 mm sec TV camera
Period *Obligations*
02/11/76-02/28/78 FY78: TOTAL: $279,894
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Schwarzschild, M. GSFC/Kelsall, T. 11-Astronomy

NAS 5-23387 **Princeton University** **2768**
Secondary electron conduction tube optimization and standardization program
Period *Obligations*
06/07/76-03/15/78 FY78: TOTAL: $776,735
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Lowrance, J. GSFC/Kelsall, T. 11-Astronomy

NAS 5-23576 **Princeton University** **2769**
Orbital operations, data reduction and analysis, and OAO guest investigator program
Period *Obligations*
09/01/76-09/30/80 FY78: $587,549 TOTAL: $1,764,655
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Spitzer, L., Jr. GSFC/Gemmell, J. D. 11-Astronomy

NAS 5-24100 **Princeton University** **2770**
Cosmic background Explorer satellite mission definition study
Period *Obligations*
02/01/77-02/01/78 FY78: $3,849 TOTAL: $21,849
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Wilkinson, D. T. GSFC/Mather, J. C. 11-Astronomy
GSFC/Muller, R.

NAS 5-24486 **Princeton University** **2771**
Microwave and theoretical studies for cosmic background Explorer satellite
Period *Obligations*
03/01/78-03/01/80 FY78: $58,151 TOTAL: $58,151
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Wilkinson, D. T. GSFC/Nace, D. A. 11-Astronomy
GSFC/Donohoe, M. J.

NAS 5-25084 **Princeton University** **2772**
Data and operations team leader for the space telescope project
Period *Obligations*
05/23/78-12/31/84 FY78: $53,000 TOTAL: $53,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Groth, E. J. GSFC/Hobbs, R. W. 11-Astronomy
GSFC/Martin, J. B.

NAS 8-32614 **Princeton University** **2773**
Develop and test mathematical models of the three dimensional flow field and particle motions
Period *Obligations*
08/23/77-02/15/79 FY78: $57,460 TOTAL: $82,460
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Saville, D. A. MSFC/Reeves, F. A. 51-Biology
MSFC/Snyder, R. S.

NAS 8-33102 **Princeton University** **2774**
The evaluation of candidate metals in a simulated space shuttle main engine environment for application as turbine blade dampers
Period *Obligations*
09/11/78-12/10/78 FY78: $14,856 TOTAL: $14,856
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Caveny, L. H. MSFC/McPherson, W.B. 49-Engr, NEC
MSFC/Schuerer, P. H.

NGL 31-001-005 **Princeton University** **2775**
Formation & stability of magnetogasdynamic front in a pitch discharge
Period *Obligations*
09/24/62-09/30/79 FY78: TOTAL: $2,422,912
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Jahn, R. G. HQ-RP/Lazar, J. 42-Astro Engr
Clark, K. E.

NGL 31-001-007 **Princeton University** **2776**
Theoretical & experimental studies of ultraviolet phenomena of astronomical interest & galactic gas dynamics
Period *Obligations*
05/06/63-03/31/80 FY78: TOTAL: $1,883,743
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Spitzer, L., Jr. HQ-SC/Roman, N. G. 11-Astronomy
HQ-SC/Rosendhal, J. D.

NGL 31-001-252 **Princeton University** **2777**
Air traffic control technology
Period *Obligations*
11/15/71-01/31/81 FY78: $75,000 TOTAL: $493,333
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Graham, D. LARC/Reid, H. J., Jr. 41-Aero Engr
LARC/MacE, W. D.

NGL 31-001-283 **Princeton University** **2778**
Lunar sample analysis
Period *Obligations*
06/30/72-06/30/78 FY78: TOTAL: $253,990
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Hollister, L. S. JSC/Harris, J. W. 11-Astronomy

NGR 31-001-202 **Princeton University** **2779**
Lunar retro-reflector ranging
Period *Obligations*
05/27/70-05/14/78 FY78: TOTAL: $15,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Dicke, R. H. HQ-SC/Boggess, N. W. 13-Physics

NGR 31-001-277 **Princeton University** **2780**
VTOL mathematical model designs for optimal control systems designs
Period *Obligations*
04/20/72-03/01/79 FY78: $29,500 TOTAL: $340,323
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Dukes, T. A. ARC/Smith, G. A. 41-Aero Engr

NSG 1070 **Princeton University** **2781**
Resonant Doppler velocimeter

Period	*Obligations*	
07/01/74-10/31/78	FY78: $46,292	TOTAL: $173,581
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Miles, R. B.	LARC/Honaker, W. C. LARC/Hunter, W. W., Jr.	13-Physics

NSG 1253 **Princeton University** **2782**
Sound transmission analysis for determining interior sound levels

Period	*Obligations*	
11/01/75-02/28/79	FY78: $61,506	TOTAL: $137,561
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Dowell, E. H.	LARC/Mixson, J. S.	41-Aero Engr

NSG 2062 **Princeton University** **2783**
Studies of space colonization

Period	*Obligations*	
01/01/75-12/01/78	FY78: $50,000	TOTAL: $273,805
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
O'Neill, G. K.	ARC/Gilbreath, W. ARC/Sadin, S. R.	99-Multi-Discip

NSG 2114 **Princeton University** **2784**
Study of a small separated region generated by a 20 ramp at M-3

Period	*Obligations*	
11/01/75-10/31/78	FY78: $54,954	TOTAL: $141,314
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bogdonoff, S. M. Settles, G. S.	ARC/Horstman, C. C. ARC/Marvin, J. G.	41-Aero Engr

NSG 2194 **Princeton University** **2785**
Transonic flow around wings, bodies and wing-body configurations

Period	*Obligations*	
11/01/76-09/30/79	FY78: $61,506	TOTAL: $118,006
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Dowell, E. H.	ARC/Davis, S. S. ARC/Chapman, G. T.	41-Aero Engr

NSG 2299 **Princeton University** **2786**
A comprehensive program of compressible turbulent boundary layer research

Period	*Obligations*	
02/01/78-01/31/79	FY78: $74,995	TOTAL: $74,995
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Settles, G. S. Bogdonoff, S. M.	ARC/Horstman, C. C. ARC/Kussoy, M. I.	41-Aero Engr

NSG 3176 **Princeton University** **2787**
Mass driver development

Period	*Obligations*	
12/01/77-11/30/78	FY78: $39,200	TOTAL: $39,200
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
O'Neill, G. K.	LERC/Pelouch, J. J., Jr.	42-Astro Engr

NSG 3178 **Princeton University** **2788**
Internal combustion engine flame propagation and emissions: Small scale turbulence modeling and large scale eddy resolution

Period	*Obligations*	
12/15/77-12/14/78	FY78: $99,343	TOTAL: $99,343
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sirignan, W. A. Humphrey, J. A. Homan, H. S.	LERC/Cassidy, J. F. LERC/Kempke, E. E.	46-Mech Engr

NSG 5063 **Princeton University** **2789**
Measurements of sec tube energetic charged particle induced background

Period	*Obligations*	
04/01/75-02/15/78	FY78:	TOTAL: $22,031
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lowrance, J. L. Spitzer, L., Jr.	GSFC/Kelsall, T.	49-Engr, NEC

NSG 5248 **Princeton University** **2790**
Observational research on the IUE satellite

Period	*Obligations*	
03/01/78-02/28/79	FY78: $20,312	TOTAL: $20,312
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Jenkins, E. B. Spitzer, L., Jr.	GSFC/Boggess, A. GSFC/West, D. K.	11-Astronomy

NSG 5277 **Princeton University** **2791**
Oblique magnetic focusing

Period	*Obligations*	
07/01/78-06/30/79	FY78: $36,513	TOTAL: $36,513
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lowrance, J. L. York, D. G.	GSFC/Williams, J. T.	13-Physics

NSG 7080 **Princeton University** **2792**
Study of elastic wave propagation in the moon

Period	*Obligations*	
07/01/74-02/28/80	FY78:	TOTAL: $176,784
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Phinney, R. A.	HQ-SL/Quaide, W. L. HQ-SL/French, B. M.	32-Geological Sci

NSG 7256 **Princeton University** **2793**
Research in extragalactic astrophysics

Period	*Obligations*	
07/01/76-06/30/78	FY78:	TOTAL: $17,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bahcall, N. A.	HQ-SC/Roman, N. G.	11-Astronomy

NSG 7280 **Princeton University** **2794**
The effect of gravity and weightlessness on the development and regeneration of the giant Coenocyte Caulerpa

Period	*Obligations*	
10/01/76-09/30/78	FY78: $40,000	TOTAL: $80,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Jacobs, W. P.	HQ-SB/Halstead, T. W. HQ-SB/Geib, D. S.	51-Biology

NEW JERSEY (Continued)

NSG 7283 **Princeton University** **2795**
Condensed matter in astrophysics

Period	*Obligations*	
10/01/76-11/30/78	FY78: $25,116	TOTAL: $44,466
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Smoluchowski, R.	HQ-SL/Dwornik, S.E. HQ-SL/Boyce, J. M.	32-Geological Sci

NSG 7302 **Princeton University** **2796**
New radiometers for balloon 3 K isotropy experiment

Period	*Obligations*	
11/15/76-01/14/79	FY78: $25,221	TOTAL: $49,621
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wilkinson, D.	HQ-SC/Boggess, N. W. HQ-SC/Roman, N. G.	11-Astronomy

NSG 7379 **Princeton University** **2797**
Large area charged coupled device image sensors for space astronomy

Period	*Obligations*	
11/01/77-09/30/78	FY78:	TOTAL: $98,775
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Schwarzschild, M.	HQ-SC/Rosendhal, J. D. HQ-SC/Roman, N. G.	11-Astronomy

NSG 5195 **Rutgers University - New Brunswick** **2798**
Investigation of the detailed light curves using SAS-3

Period	*Obligations*	
08/01/77-01/31/79	FY78:	TOTAL: $10,690
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Matilsky, T. A.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 7327 **Rutgers University - New Brunswick** **2799**
Research and studies of metal silicate relationships in howardite breccias

Period	*Obligations*	
02/01/77-01/31/79	FY78: $25,105	TOTAL: $53,060
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hewins, R. H.	HQ-SL/French, B. M. HQ-SL/Quaide, W. L.	32-Geological Sci

NSG 9065 **Rutgers University - New Brunswick** **2800**
Flow behavior of extraterrestrial materials

Period	*Obligations*	
02/01/78-01/31/79	FY78: $20,415	TOTAL: $20,415
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Klein, L. C.	JSC/Harris, J. W.	32-Geological Sci

NSG 1314 **Rutgers University - Newark** **2801**
Three-body recombination in turbulent supersonic flow

Period	*Obligations*	
06/07/76-07/06/78	FY78: $15,000	TOTAL: $79,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Johnson, J. A., III	LARC/Beach, H. L., Jr. LARC/Huber, P. W.	13-Physics

NSG 3180 **Trenton State College** **2802**
Analytical modeling of flash-back phenomena

Period	*Obligations*	
01/01/78-06/30/78	FY78: $10,429	TOTAL: $10,429
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Feng, C. C.	LERC/Marek, C. J.	46-Mech Engr

NEW MEXICO

NGT 32-010-001 **New Mexico Highlands University** **2803**
Training of undergraduate students in sciences and engineering

Period	*Obligations*	
06/01/74-05/31/78	FY78:	TOTAL: $49,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Zenick, H.	HQ-LU/Pohly, J. G. HQ-U/Jenkins, H. G.	99-Multi-Discip

NCA 5-64 **New Mexico Institute of Mining & Tech** **2804**
Research of cometary and astrophysical sciences

Period	*Obligations*	
04/30/76-09/30/77	FY78:	TOTAL: $10,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Moore, E.	GSFC/Hobbs, R. W.	11-Astronomy

NCA 5-67 **New Mexico Institute of Mining & Tech** **2805**
Research in cometary and astrophysical services

Period	*Obligations*	
08/23/76-09/30/77	FY78:	TOTAL: $5,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Moore, E.	GSFC/Hobbs, R. W.	11-Astronomy

NCA 5-68 **New Mexico Institute of Mining & Tech** **2806**
Research of cometary and astrophysical sciences

Period	*Obligations*	
08/23/76-09/30/77	FY78:	TOTAL: $4,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Moore, E.	GSFC/Hobbs, R. W.	11-Astronomy

NCA 5-69 **New Mexico Institute of Mining & Tech** **2807**
Cometary observations and research activities

Period	*Obligations*	
08/23/76-12/31/80	FY78:	TOTAL: $5,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Moore, E.	GSFC/Hobbs, R. W.	11-Astronomy

NCA 5-71 **New Mexico Institute of Mining & Tech** **2808**
Cometary and astrophysical research activities

Period	*Obligations*	
11/01/76-09/30/78	FY78: $20,000	TOTAL: $40,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Moore, E.	GSFC/Hobbs, R. W.	11-Astronomy

NCA 5-72 **New Mexico Institute of Mining & Tech** **2809**
Multichannel spectrometer observations and analysis of data

Period	*Obligations*	
12/13/76-12/31/77	FY78:	TOTAL: $6,400
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ford, K. W.	GSFC/Hobbs, R. W.	11-Astronomy

NCA 5-78 **New Mexico Institute of Mining & Tech** **2810**
Observing data analysis and instrumentation programs

Period	*Obligations*	
05/31/77-12/31/78	FY78: $4,800	TOTAL: $4,800
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Moore, E.	GSFC/Jones, H. P.	11-Astronomy

NAS 5-24241 **New Mexico State University - Las Cruces** **2811**
Sounding rocket support

Period	*Obligations*	
08/01/77-07/31/80	FY78: $1,217,339	TOTAL: $1,373,939
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lawrence, H.	GSFC/Pincus, B. R.	49-Engr, NEC
Connell, H.	GSFC/Windsor, M.	

NAS 6-2686 **New Mexico State University - Las Cruces** **2812**
Tone ranging/telemetering interferometer system

Period	*Obligations*	
11/21/75-09/21/77	FY78:	TOTAL: $87,826
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gammill, B. G.	WFC/West, W. W.	46-Mech Engr
	WFC/Bell, H. T.	

NAS 6-2795 **New Mexico State University - Las Cruces** **2813**
Services and materials necessary for engineering studies related to airborne surface contour mapping

Period	*Obligations*	
11/16/76-01/14/78	FY78:	TOTAL: $64,465
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Guard, K.	WFC/Walsh, E. J.	32-Geological Sci
	WFC/Krabill, W. B.	

NAS 6-2885 **New Mexico State University - Las Cruces** **2814**
Refinement of grid adjustment software for contour mapping studies

Period	*Obligations*	
03/01/78-02/28/79	FY78: $49,970	TOTAL: $49,970
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Guard, K.	WFC/Krabill, W. B.	32-Geological Sci
	WFC/Walsh, W. J.	

NAS 9-15524 **New Mexico State University - Las Cruces** **2815**
Study of salt-affected saline soils

Period	*Obligations*	
01/29/78-01/28/79	FY78: $75,000	TOTAL: $75,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Carver, K. R.	JSC/Krishen, K.	32-Geological Sci

NAS 9-15660 **New Mexico State University - Las Cruces** **2816**
Balloon-borne cosmic ray laboratory program

Period	*Obligations*	
08/07/78-12/06/78	FY78: $35,365	TOTAL: $35,365
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Golden, R. L.	JSC/Davis, W. G.	31-Atmos Sci

NAS 9-95482 **New Mexico State University - Las Cruces** **2817**
Study to test and evaluate residual SEASAT hardware for possible implementation for the OFT-2 SAR antenna

Period	*Obligations*	
09/23/77-12/01/78	FY78: $38,963	TOTAL: $58,942
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Henry, D. G.	JSC/Nitschke, H. A.	39-Env Sci, NEC

NAS10-9115 **New Mexico State University - Las Cruces** **2818**
Technical operations support for the spacecraft laboratory

Period	*Obligations*	
03/02/77-09/30/78	FY78: $100,000	TOTAL: $379,815
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Noda, T.	KSC/Schlimmer, G. E.	42-Astro Engr

NGL 32-003-001 **New Mexico State University - Las Cruces** **2819**
Photographic patrol and study of physical conditions on the moon and planets

Period	*Obligations*	
04/15/61-06/30/79	FY78: $70,043	TOTAL: $1,888,951
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Beebe, R. F.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Quaide, W. L.	

NSG 3069 **New Mexico State University - Las Cruces** **2820**
Interferogram analysis of periodic spectra

Period	*Obligations*	
05/15/75-05/14/77	FY78:	TOTAL: $73,316
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Armstrong, R. L.	LERC/Salzman, J. A.	13-Physics

NSG 7346 **New Mexico State University - Las Cruces** **2821**
Two station meteor patrol for orbit determination and spectroscopy

Period	*Obligations*	
07/11/77-06/30/78	FY78:	TOTAL: $9,043
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Beebe, H. A.	HQ-SL/Donn, B. D.	11-Astronomy
	HQ-SL/Brunk, W. E.	

NSG 3092 **University of Albuquerque** **2822**
In situ analysis of trace metal ion pollutants in natural waters

Period	*Obligations*	
01/05/76-07/05/78	FY78: $20,066	TOTAL: $94,740
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Urzendowski, R. M.	LERC/Fordyce, J. S.	12-Chemistry

NEW MEXICO (Continued)

NAS 1-11855 **University of New Mexico** **2823**
Participation in science planning for Viking 1975 missions in area of inorganic chemistry

Period	*Obligations*	
08/18/72-09/30/78	FY78: $11,000	TOTAL: $108,845
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Keil, K.	LARC/Williams, T. S., Jr.	12-Chemistry
	LARC/Glenny, W. R.	

NASW 2936 **University of New Mexico** **2824**
Operation of NASA's Industrial Applications Center

Period	*Obligations*	
07/01/76-09/30/78	FY78: $250,000	TOTAL: $548,864
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Unavailable	HQ-ET/Bivins, R. G.	99-Multi-Discip

NCA 5-55 **University of New Mexico** **2825**
Molecular ion spectra research

Period	*Obligations*	
09/15/75-08/31/76	FY78:	TOTAL: $6,920
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Beckel, C. L.	GSFC/Temkin, A.	11-Astronomy

NCA 5-57 **University of New Mexico** **2826**
Cosmic X-ray sources investigations

Period	*Obligations*	
09/15/75-12/31/76	FY78:	TOTAL: $19,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
StJohn, R.	GSFC/Maran, S. P.	11-Astronomy

NCA 5-66 **University of New Mexico** **2827**
Reduction and analysis of OSO-8 data

Period	*Obligations*	
08/25/76-12/31/77	FY78:	TOTAL: $4,400
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Regener, V. H.	GSFC/Jones, H. P.	11-Astronomy

NCA 5-73 **University of New Mexico** **2828**
Investigations of cosmic X-ray sources

Period	*Obligations*	
12/09/76-12/31/77	FY78: $12,998	TOTAL: $12,998
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
StJohn, R.	GSFC/Hobbs, R. W.	11-Astronomy

NGL 32-004-011 **University of New Mexico** **2829**
Comparative study of lunar craters and terrestrial volcano-tectonic depressions in rhyolite ash-flow plateaus

Period	*Obligations*	
10/12/64-08/31/78	FY78:	TOTAL: $395,800
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Elston, W. E.	HQ-SL/Goldstein, B. E.	32-Geological Sci

NGL 32-004-063 **University of New Mexico** **2830**
Lunar sample analysis

Period	*Obligations*	
01/06/71-01/31/81	FY78: $97,955	TOTAL: $801,418
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Keil, K.	JSC/Harris, J. W.	12-Chemistry

NGL 32-004-064 **University of New Mexico** **2831**
Mineralogy and chemistry of polymiot-brecciated stone meteorites

Period	*Obligations*	
06/14/71-02/29/80	FY78:	TOTAL: $479,137
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Keil, K.	HQ-SL/French, B. M.	32-Geological Sci
Fodor, R. V.	HQ-SL/Quaide, W. L.	
Taylor, G. J.		

NGR 32-004-062 **University of New Mexico** **2832**
Search for evidence of dynamic process

Period	*Obligations*	
06/22/70-12/31/78	FY78: $27,920	TOTAL: $179,170
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Elston, W. E.	HQ-SL/Dwornik, S.E.	32-Geological Sci
	HQ-SL/Boyce, J. M.	

NGT 32-004-770 **University of New Mexico** **2833**
A precooperative education program

Period	*Obligations*	
07/25/77-07/24/79	FY78: $10,247	TOTAL: $20,208
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Etter, D. M.	HQ-LU/Pohly, J. G.	49-Engr, NEC
	HQ-U/Jenkins, H. G.	

NEW YORK

NAS 5-23688 **Adelphi University** **2834**
Determination of the effectiveness of emulsion technology in increasing the efficiency of boiler furnaces and reducing the pollutant emissions from heavy residual fuels

Period	*Obligations*	
09/03/76-07/15/77	FY78:	TOTAL: $58,527
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Dooher, J. P.	GSFC/Tarlton, M. J.	39-Env Sci, NEC
Genberg, R. W.		

NSG 2088 **Adelphi University** **2835**
Study of the thin turbulent shear layers on the optical transfer function of an imaging system

Period	*Obligations*	
09/01/75-01/31/79	FY78: $18,077	TOTAL: $77,946
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Steinmetz, W. J.	ARC/Buell, D. A.	12-Chemistry

NSG 1378 **Brooklyn College** **2836**
Research in medium and high energy atomic physics theory
Period *Obligations*
12/03/76-06/30/79 FY78: TOTAL: $42,170
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Franco, V. LARC/Meador, W. E. 13-Physics
Thomas, B. K. LARC/Wilson, J. W.

NAS 5-22392 **City College of New York** **2837**
Numerical models of ocean circulation
Period *Obligations*
06/27/75-03/26/77 FY78: $574 TOTAL: $24,574
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Pierson, W. J. GSFC/Mueller, J. L. 33-Oceanography

NAS 6-2439 **City College of New York** **2838**
GEOS-C research study
Period *Obligations*
02/04/74-01/31/78 FY78: TOTAL: $98,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Pierson, W. J. WFC/Rossi, L. C. 32-Geological Sci
WFC/Stanley, H. R.

NAS 9-13940 **City College of New York** **2839**
Communication systems analysis study
Period *Obligations*
04/04/74-06/02/79 FY78: $20,000 TOTAL: $209,892
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Schilling, D. L. JSC/Land, C. K. 45-Elec Engr
Scheinberg, N.
Davidovici, S.

NGL 33-013-040 **City College of New York** **2840**
Theoretical research in astrophysics and astronomy
Period *Obligations*
04/23/69-09/30/81 FY78: $25,000 TOTAL: $379,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Erlbach, E. GSFC/Canuto, V. 11-Astronomy
GSFC/Stothers, R.

NGR 33-013-086 **City College of New York** **2841**
Models for large scale meteorological prediction experiments
Period *Obligations*
10/01/73-11/30/78 FY78: $44,975 TOTAL: $226,942
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Spar, J. GSFC/Hansen, J. E. 31-Atmos Sci

NSG 1169 **City College of New York** **2842**
An adaptive learning control system for aircraft
Period *Obligations*
05/01/75-09/30/78 FY78: TOTAL: $84,352
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Mekel, R. LARC/Montgomery, R.C. 41-Aero Engr

NSG 1485 **City College of New York** **2843**
Theory of strong turbulence by renormalization into repeated-cascade
Period *Obligations*
01/15/78-01/14/79 FY78: $25,000 TOTAL: $25,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Tchen, C. M. LARC/Hess, R. V. 31-Atmos Sci
LARC/Maestrello, L.

NSG 3174 **City College of New York** **2844**
Analysis of turbulent coaxial flow with international energy generation
Period *Obligations*
10/03/77-06/15/79 FY78: $78,583 TOTAL: $78,583
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Weinstein, H. LERC/Braun, W. H. 49-Engr, NEC

NSG 5013 **City College of New York** **2845**
Efficient processing of video signals
Period *Obligations*
06/15/74-09/30/79 FY78: $45,000 TOTAL: $195,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Schilling, D. L. GSFC/Kahle, D. R. 45-Elec Engr

NSG 7144 **City College of New York** **2846**
Applications of satellite technology for regional organizations
Period *Obligations*
06/01/75-06/30/77 FY78: TOTAL: $400,606
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Schilling, D. L. HQ-EE/Ernst, H. M. 49-Engr, NEC
Wecker, S. C. HQ-EE/Fang, A. C.

NAS 8-32944 **Clarkson College of Technology** **2847**
Experiment for materials processing in space, physical phenomena in containerless glass processing
Period *Obligations*
02/23/78-02/23/83 FY78: $148,502 TOTAL: $148,502
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Subramanian, R. S. MSFC/Williams, J. R. 13-Physics
Cole, R. MSFC/Johnson, J. L.

NSG 3191 **Clarkson College of Technology** **2848**
Design of a microprocessor-based high speed space borne message switch
Period *Obligations*
04/15/78-04/15/79 FY78: $37,412 TOTAL: $37,412
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Arozullah, M. LERC/Rotnem, J. O. 45-Elec Engr
Christ, S. C.

NSG 7170 **Clarkson College of Technology** **2849**
Particle induced visual sensations

Period	*Obligations*	
09/01/75-07/28/77	FY78:	TOTAL: $5,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McNulty, P. J.	HQ-SB/Halstead, T. W.	
Pease, V. P.		59-Life Sci, NEC
Bond, V. P.		

NSG 9059 **Clarkson College of Technology** **2850**
Light flash phenomena induced by haze particles

Period	*Obligations*	
09/01/77-08/31/79	FY78:	TOTAL: $34,331
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McNulty, P. J.	JSC/Barnes, C. M.	13-Physics
Pease, V. P.		

NAS 5-22408 **Columbia University** **2851**
Reduction and analysis of data from OSO-I graphite crystal X-ray spectrometer and polarimeter experiment

Period	*Obligations*	
06/26/75-09/30/78	FY78: $212,480	TOTAL: $860,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Novick, R.	GSFC/Gemmell, J. D.	31-Atmos Sci

NAS 5-24080 **Columbia University** **2852**
Technical service operations and materials for cataloging books and other material

Period	*Obligations*	
04/01/77-04/01/78	FY78: $38,491	TOTAL: $63,491
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lewis, J. P.	GSFC/Jennings, N.	99-Multi-Discip

NAS 5-24152 **Columbia University** **2853**
Data reduction and analysis of graphite crystal X-ray spectrometer OSO-I

Period	*Obligations*	
10/01/77-09/30/79	FY78: $26,520	TOTAL: $126,520
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Novick, R.	GSFC/Gemmell, J. D.	31-Atmos Sci
	GSFC/Kupperian, J. E., Jr.	

NAS 5-24452 **Columbia University** **2854**
Technical service operations and material for processing and cataloging of material

Period	*Obligations*	
04/01/78-03/31/79	FY78: $26,509	TOTAL: $26,509
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lewis, J. P.	GSFC/Jennings, N.	21-Mathematics

NAS 5-24457 **Columbia University** **2855**
Solar flare X-ray polarimeter experiment

Period	*Obligations*	
02/22/78-12/31/80	FY78: $662,000	TOTAL: $662,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Novick, R.	GSFC/Stouffer, C. G.	11-Astronomy
Chanan, G. A.		

NAS 6-2455 **Columbia University** **2856**
Mapping of ocean tides using GEOS-C data

Period	*Obligations*	
03/15/74-01/31/79	FY78:	TOTAL: $101,017
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kuo, J. T.	WFC/Stanley, H. R.	33-Oceanography
Jachens, R. C.	WFC/Rossi, L. C.	

NAS 6-2519 **Columbia University** **2857**
GEOS-C research

Period	*Obligations*	
10/16/74-07/31/78	FY78:	TOTAL: $283,517
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Talwani, M.	WFC/Stanley, H. R.	32-Geological Sci
Watts, A. B.	WFC/Rossi, L. C.	

NAS 8-30753 **Columbia University** **2858**
Design, development and operation of the HEAO mission B X-ray telescope experiment

Period	*Obligations*	
06/01/74-12/31/79	FY78: $106,851	TOTAL: $245,451
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Novick, R.	MSFC/Manning, H. S.	11-Astronomy
Angel, J. R.	MSFC/Hughes, J. C.	
Kestenbaum, H. L.		

NAS 8-32212 **Columbia University** **2859**
Space vehicle control system

Period	*Obligations*	
09/01/76-06/30/79	FY78: $10,000	TOTAL: $20,054
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Likins, P. A.	MSFC/Seltzer, S. M.	19-Phys Sci, NEC
Longman, R.	MSFC/Shelton, H. L.	

NAS 8-33085 **Columbia University** **2860**
A search for collapsed companions among selected OB stars

Period	*Obligations*	
06/23/78-02/22/79	FY78: $7,000	TOTAL: $7,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Novick, R.	MSFC/Dailey, C. C.	11-Astronomy
Helfand, D. J.		

NAS 9-14931 **Columbia University** **2861**
Study developed disuse osteoporosis in animals

Period	*Obligations*	
01/01/76-12/31/78	FY78: $30,000	TOTAL: $145,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bassett, C. A.	JSC/Rambaut, P. C.	53-Other Medical

NGR 33-008-102 **Columbia University** **2862**
Research in X-ray astronomy

Period	*Obligations*	
01/30/68-01/14/79	FY78: $259,500	TOTAL: $1,958,342
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Novick, R.	GSFC/Bissell, E. E.	11-Astronomy
Long, K. S.	HQ-SC/Opp, A. G.	
Helfand, D. J.		

NGR 33-008-146 **Columbia University** **2863**
Study of strain buildup, release and earthquake prediction

Period	*Obligations*	
02/09/71-05/31/79	FY78: $92,068	TOTAL: $518,491
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Scholz, C. H. Johnson, T. L. Bilham, R. G.	GSFC/Smith, D. E.	19-Phys Sci, NEC

NGR 33-008-177 **Columbia University** **2864**
Lunar sample analysis

Period	*Obligations*	
11/01/72-01/31/79	FY78: $31,999	TOTAL: $137,040
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Horai, K.	JSC/Harris, J. W.	13-Physics

NGR 33-008-189 **Columbia University** **2865**
Study of X-ray polarization of solar flares

Period	*Obligations*	
09/01/73-11/30/76	FY78:	TOTAL: $25,287
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wolff, R. S.	HQ-ST/Timothy, A. F.	11-Astronomy

NGR 33-008-191 **Columbia University** **2866**
Multidisciplinary research in the space sciences

Period	*Obligations*	
02/15/73-04/30/77	FY78:	TOTAL: $1,751,796
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hartmann, S. R. Broecker, W. S.	GSFC/Thaddeus, P.	11-Astronomy

NSG 1164 **Columbia University** **2867**
Study of community annoyance with aircraft noise in the vicinity of JFK airport

Period	*Obligations*	
04/01/75-03/31/79	FY78: $135,000	TOTAL: $524,787
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Borsky, P. N.	LARC/Powell, C. A. LARC/Stephens, D. G.	49-Engr, NEC

NSG 1450 **Columbia University** **2868**
Aircraft cabin noise, prediction and optimization

Period	*Obligations*	
09/06/77-01/05/79	FY78: $49,266	TOTAL: $49,266
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Vaicaitis, R.	LARC/Mixson, J. S.	41-Aero Engr

NSG 1541 **Columbia University** **2869**
Influence of auditory inputs on simulated flight operations

Period	*Obligations*	
06/15/78-04/14/79	FY78: $73,794	TOTAL: $73,794
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Galanter, E.	LARC/Harris, R. L., Sr. LARC/Bergeron, H. P.	41-Aero Engr

NSG 1550 **Columbia University** **2870**
Time-of-day effects on the numerical representation of community response to noise

Period	*Obligations*	
07/01/78-06/30/79	FY78: $48,863	TOTAL: $48,863
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Galanter, E.	LARC/Cawthorn, J. M. LARC/Stephens, D. G.	49-Engr, NEC

NSG 3050 **Columbia University** **2871**
Creep and stress rupture behavior of oxide dispersion strengthened super alloys

Period	*Obligations*	
06/01/75-11/30/78	FY78:	TOTAL: $116,549
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Tien, J. K.	LERC/Glasgow, T.K.	47-Materials Engr

NSG 5072 **Columbia University** **2872**
Surface deformation and elasticity studies

Period	*Obligations*	
08/01/75-01/31/79	FY78: $22,028	TOTAL: $97,766
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bilham, R. G.	GSFC/Allenby, R. J. GSFC/Mead, G. D.	32-Geological Sci

NSG 5079 **Columbia University** **2873**
High spatial resolution study of extended X-ray sources using Copernicus satellite and sounding rockets observations

Period	*Obligations*	
09/01/75-02/28/77	FY78:	TOTAL: $9,909
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wolff, R. S.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5080 **Columbia University** **2874**
Application of LANDSAT data to agricultural resource problems

Period	*Obligations*	
08/15/75-11/30/78	FY78: $80,010	TOTAL: $224,373
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Webb, K. E. High, C. J. Coiner, J. C.	GSFC/Ungar, S. G.	32-Geological Sci

NSG 5118 **Columbia University** **2875**
High resolution spectroscopy of variable X-ray sources

Period	*Obligations*	
06/01/76-05/31/77	FY78:	TOTAL: $7,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wolff, R. S.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5146 **Columbia University** **2876**
Research of instrumentation design parameters for solar X-ray polarization experiments

Period	*Obligations*	
12/01/76-11/30/78	FY78:	TOTAL: $50,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Novick, R.	GSFC/Bissell, E. E.	13-Physics

NSG 5163 **Columbia University** **2877**
Multidisciplinary research in the space studies

Period	*Obligations*	
03/01/77-06/30/79	FY78: $400,009	TOTAL: $838,035
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Happner, W.	GSFC/Thaddeus, P.	11-Astronomy
Broecker, W. S.	GSFC/Hansen, J. E.	

NSG 5168 **Columbia University** **2878**
Simultaneous observations of the ultraviolet spectrum, the optical spectrum and the optical polarization of orionis

Period	*Obligations*	
04/01/77-03/31/78	FY78:	TOTAL: $5,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hayes, D. P.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5194 **Columbia University** **2879**
Simultaneous X-ray photometric and polarimetric observations of the Cygnus field

Period	*Obligations*	
08/01/77-01/31/79	FY78:	TOTAL: $7,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Novick, R.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5200 **Columbia University** **2880**
Sounding rocket-borne X-ray research of temporal and spectral features

Period	*Obligations*	
08/01/77-07/31/78	FY78:	TOTAL: $4,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Novick, R.	GSFC/Kupperian, J. E., Jr.	
Wolff, R. S.		11-Astronomy

NSG 5222 **Columbia University** **2881**
Remote spectral analysis of mineral induced plant stress using airborne techniques

Period	*Obligations*	
01/16/78-01/15/79	FY78: $24,038	TOTAL: $24,038
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kuo, J. T.	GSFC/Schnetzler, C. C.	
Collins, W. E.	GSFC/Meehan, K.	32-Geological Sci

NSG 5273 **Columbia University** **2882**
Application of GEOS-3 altimeter data to solution of problems in earth dynamics

Period	*Obligations*	
07/01/78-06/30/79	FY78: $50,000	TOTAL: $50,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Talwani, M.	GSFC/Smith, D. E.	32-Geological Sci
Watts, A. B.		

NSG 7075 **Columbia University** **2883**
Solar X-ray polarimentry

Period	*Obligations*	
07/01/74-09/30/76	FY78:	TOTAL: $123,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Novick, R.	HQ-ST/Timothy, A. F.	11-Astronomy

NSG 7105 **Columbia University** **2884**
Calculation of collision cross sections of astrophysical interest

Period	*Obligations*	
12/01/74-11/30/78	FY78: $37,000	TOTAL: $143,056
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Green, S.	HQ-SC/Boggess, N. W.	11-Astronomy
	HQ-SC/Roman, N. G.	

NSG 7194 **Columbia University** **2885**
A critical study of constraints imposed by existing observational data

Period	*Obligations*	
02/01/76-01/31/79	FY78: $25,000	TOTAL: $93,855
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Keihm, S. J.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. E.	

NSG 7200 **Columbia University** **2886**
Rare-earth element abundance studies in chondrite meteorites

Period	*Obligations*	
03/01/76-04/30/79	FY78:	TOTAL: $133,907
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
O'Nions, R. K.	HQ-SL/French, B. M.	32-Geological Sci
Ridley, W. I.	HQ-SL/Quaide, W. L.	
Evenson, N. M.		

NSG 7248 **Columbia University** **2887**
Detailed studies of time variability of the galactic X-ray sources Cygnus X-1 and Scorpius X-1

Period	*Obligations*	
06/15/75-12/14/77	FY78:	TOTAL: $20,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Weisskopf, M. C.	HQ-SC/Sofia, S.	11-Astronomy
	HQ-SC/Opp, A. G.	

NSG 7434 **Columbia University** **2888**
Phase stability and elastic wave velocity determinations for stoichiometric FeS

Period *Obligations*
02/01/78-01/31/79 FY78: $63,123 TOTAL: $63,123
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Takahashi, T. HQ-SL/Quaide, W. L. 32-Geological Sci
HQ-SL/French, B. E.

NSG 7466 **Columbia University** **2889**
Petrogenesis of chondrules and chondrites

Period *Obligations*
05/01/78-04/30/79 FY78: $38,296 TOTAL: $38,296
Prin. Invest. *NASA Tech. Officer* *CASE Category*
O'Nions, R. K. HQ-SL/French, B. E. 32-Geological Sci

NAS 1-9683 **Cornell University** **2890**
Participation in the science planning for the Viking 1975 missions in the area of imaging

Period *Obligations*
04/08/70-09/30/78 FY78: $103,320 TOTAL: $457,479
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Sagan, C. E. LARC/Williams, T. S., Jr.
LARC/Glenny, W. R. 99-Multi-Discip

NAS 5-20705 **Cornell University** **2891**
Theoretical investigation for atmospheric Explorer C, D & E missions

Period *Obligations*
08/19/74-12/31/77 FY78: TOTAL: $132,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Walker, J. C. GSFC/Gustafson, C. 13-Physics

NAS 5-23236 **Cornell University** **2892**
Feasibility study for infrared interferometer, spectrometer, & radiometer for Mariner/Jupiter 1977 launch

Period *Obligations*
05/01/73-10/31/81 FY78: $10,000 TOTAL: $45,300
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Gierasch, P. J. GSFC/Conrath, B. J. 13-Physics
GSFC/Hanel, R. A.

NAS 5-23785 **Cornell University** **2893**
Investigation of atmospheric planetary dynamics

Period *Obligations*
10/27/76-10/26/78 FY78: $12,000 TOTAL: $12,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Gierasch, P. J. GSFC/Pirraglia, J. A. 31-Atmos Sci

NAS 9-15378 **Cornell University** **2894**
Lymphocyte microelectrophoresis

Period *Obligations*
07/28/77-12/31/77 FY78: TOTAL: $75,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Rubin, A. L. JSC/Morrison, D. R. 59-Life Sci, NEC

NCA 2-175801 **Cornell University** **2895**
Interactions of planetary satellites: The capture and tidal acceleration of moons, and the dynamics of circumplanetary dust

Period *Obligations*
01/01/78-12/31/78 FY78: $6,250 TOTAL: $6,250
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Burns, J. A. ARC/Pollack, J. B. 11-Astronomy

NGL 33-010-082 **Cornell University** **2896**
The study of lunar and planetary surfaces and atmospheres

Period *Obligations*
09/23/68-08/31/80 FY78: $70,000 TOTAL: $698,718
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Sagan, C. E. HQ-SL/Donn, B. D. 31-Atmos Sci
HQ-SL/Brunk, W. E.

NGL 33-010-171 **Cornell University** **2897**
A program in remote sensing

Period *Obligations*
02/14/72-05/31/81 FY78: $100,000 TOTAL: $800,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Liang, T. HQ-ET/Vitale, J. A. 39-Env Sci, NEC

NGL 33-010-186 **Cornell University** **2898**
Studies of thermal structure and motion of planetary atmospheres

Period *Obligations*
04/18/73-06/14/80 FY78: $31,400 TOTAL: $194,860
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Gierasch, P. J. HQ-SL/Brunk, W. M. 31-Atmos Sci
HQ-SL/Mitz, M. A.

NGR 33-010-081 **Cornell University** **2899**
2 to 4 micron spectroscopy of Mars

Period *Obligations*
03/01/73-11/01/79 FY78: $63,000 TOTAL: $273,897
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Houck, J. R. ARC/Haughney, L. C. 11-Astronomy
ARC/McClenahan, J. O.

NGR 33-010-101 **Cornell University** **2900**
An integrated program in exobiology and problems related to origin of life

Period *Obligations*
10/09/69-09/30/78 FY78: $80,000 TOTAL: $699,945
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Sagan, C. E. HQ-SB/Young, R. S. 12-Chemistry
Khare, B. N.

NGR 33-010-108 **Cornell University** **2901**
Implications of convection within the moon

Period *Obligations*
05/18/70-01/31/78 FY78: $27,000 TOTAL: $171,220
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Turcotte, D. L. HQ-SL/Quaide, W. L. 32-Geological Sci
HQ-SL/French, B. E.

NGR 33-010-146 **Cornell University** **2902**
Submillimeter astronomical spectrometry from aircraft
Period *Obligations*
02/16/72-10/31/78 FY78: $27,160 TOTAL: $232,714
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Harwit, M. O. ARC/Cameron, R. M. 11-Astronomy
ARC/Mason, R. H.

NGR 33-010-161 **Cornell University** **2903**
Studies of the magnetospheres of Earth and Jupiter
Period *Obligations*
01/18/72-06/30/78 FY78: $50,000 TOTAL: $227,790
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Farley, D. T. HQ-ST/Cauffman, D. P. 13-Physics
HQ-ST/Schmerling, E. R.

NGR 33-010-172 **Cornell University** **2904**
Research in a multiband far infrared surface with a balloon-borne telescope
Period *Obligations*
11/20/72-02/19/78 FY78: TOTAL: $233,915
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Harwit, M. O. HQ-SC/Boggess, N. W. 11-Astronomy
HQ-SC/Roman, N. G.

NGR 33-010-182 **Cornell University** **2905**
16 to 40 micron spectroscopy of Jupiter
Period *Obligations*
12/20/72-10/31/78 FY78: $35,000 TOTAL: $235,084
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Houck, J. R. ARC/Cameron, R. M. 11-Astronomy
Forrest, W. J. ARC/Mason, R. H.

NGR 33-010-188 **Cornell University** **2906**
Astrophysical material science theory
Period *Obligations*
08/01/72-09/30/78 FY78: $44,000 TOTAL: $236,371
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Ashcroft, N. W. LERC/Flood, D. J. 13-Physics
Krumhansl, J. A.

NGR 33-010-189 **Cornell University** **2907**
Ultra pressure materials science
Period *Obligations*
08/01/75-09/30/78 FY78: $136,000 TOTAL: $677,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Ruoff, A. L. LERC/Aron, P. R. 47-Materials Engr

NGR 33-010-220 **Cornell University** **2908**
Interdisciplinary investigations of Mariner 9 data
Period *Obligations*
12/05/73-09/30/78 FY78: $43,782 TOTAL: $253,191
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Sagan, C. E. HQ-SL/Dwornik, S.E. 32-Geological Sci
HQ-SL/Boyce, J. M.

NSG 1365 **Cornell University** **2909**
The balance equation as a diagnostic tool for detecting the initiation of the multiscale energy cascade
Period *Obligations*
12/01/76-09/30/78 FY78: TOTAL: $29,268
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Paine, D. A. LARC/Costen, R. C. 31-Atmos Sci
LARC/Young, G. R.

NSG 2078 **Cornell University** **2910**
Structural characterization of hydrogen attack
Period *Obligations*
04/01/75-03/31/79 FY78: $37,000 TOTAL: $136,509
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Johnson, H. H. ARC/Nelson, H. G. 47-Materials Engr

NSG 2174 **Cornell University** **2911**
Opportunity occultation studies of planets, satellites and asteroids
Period *Obligations*
09/01/76-10/31/78 FY78: $10,293 TOTAL: $112,378
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Elliot, J. L. ARC/Haughney, L. C. 11-Astronomy
ARC/Cameron, R. M.

NSG 2262 **Cornell University** **2912**
Airborne infrared and submillimeter astronomical polarization measurements at different wavelengths
Period *Obligations*
10/01/77-12/31/78 FY78: $30,000 TOTAL: $30,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Harwit, M. O. ARC/Gillespie, C. M., Jr. 11-Astronomy
ARC/Cameron, R. M.

NSG 2331 **Cornell University** **2913**
Broadband rotor noise
Period *Obligations*
08/15/78-03/01/79 FY78: $2,373 TOTAL: $2,373
Prin. Invest. *NASA Tech. Officer* *CASE Category*
George, A. R. ARC/Yu, Y. H. 41-Aero Engr
ARC/Schmitz, F. H.

NSG 3019 **Cornell University** **2914**
Flow processes in combusters
Period *Obligations*
07/01/74-06/30/79 FY78: $90,405 TOTAL: $391,102
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Gouldin, F. C. LERC/Marek, C. J. 41-Aero Engr
Leibovich, S. LERC/Diehl, L. A.
McLean, W. J.

NSG 5060 **Cornell University** **2915**
Comparison between calculated gravity anomalies for dynamic processes in the mantle and observations
Period *Obligations*
04/01/75-03/31/79 FY78: $20,000 TOTAL: $110,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Turcotte, D. L. GSFC/Smith, D. E. 32-Geological Sci

NSG 6020 **Cornell University** **2916**
Rocket investigation of neutral atmosphere ionosphere coupling and planetary electrodynamics

Period	*Obligations*	
03/01/78-02/28/79	FY78: $50,975	TOTAL: $50,975
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kelley, M. C.	WFC/Gray, J. W. WFC/Pless, R. H.	19-Phys Sci, NEC

NSG 7126 **Cornell University** **2917**
High spatial resolution multicolor observation of Neptune during occultation by the moon

Period	*Obligations*	
01/01/75-03/31/79	FY78: $32,700	TOTAL: $108,428
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Veverka, J.	HQ-SL/Brunk, W. E. HQ-SL/Quaide, W. L.	11-Astronomy

NSG 7156 **Cornell University** **2918**
Physical studies of planetary surfaces

Period	*Obligations*	
07/01/75-09/30/78	FY78: $38,000	TOTAL: $97,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Veverka, J.	HQ-SL/Dwornik, S.E. HQ-SL/Boyce, J. M.	32-Geological Sci

NSG 7235 **Cornell University** **2919**
Light-induced amino acid transport by envelope vesicles of halobacterium halobium cells

Period	*Obligations*	
03/01/76-06/30/79	FY78: $33,500	TOTAL: $100,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
MacDonald, R. E.	HQ-SB/Young, R. S.	51-Biology

NSG 7268 **Cornell University** **2920**
Gravitational time delay in orthogonally polarized radiation passing by the sun

Period	*Obligations*	
09/01/76-08/31/78	FY78: $10,000	TOTAL: $29,980
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Harwit, M. O.	HQ-SL/Kochendorfer, F. D. HQ-SC/Opp, A. G.	32-Geological Sci

NSG 7324 **Cornell University** **2921**
Bolometer system

Period	*Obligations*	
04/01/77-07/31/78	FY78:	TOTAL: $29,900
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Houck, J. R.	HQ-SC/Boggess, N. W. HQ-SC/Roman, N. G.	11-Astronomy

NSG 7348 **Cornell University** **2922**
Analysis of erosion and transportation features from lunar orbiter and Apollo photography

Period	*Obligations*	
06/15/77-07/31/78	FY78:	TOTAL: $23,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gold, T.	HQ-SL/Goldstein, B. E. HQ-SL/Quaide, W. L.	32-Geological Sci

NSG 7445 **Cornell University** **2923**
Consequences of past lunar tides, heating surface processes and orbital evolution

Period	*Obligations*	
04/01/78-03/31/79	FY78: $21,600	TOTAL: $21,600
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Burns, J. A.	HQ-SL/Quaide, W. L.	31-Atmos Sci

NSG 2259 **Cornell University - Medical Center** **2924**
Central neural and neurochemical mechanisms subserving postural cardiovascular changes

Period	*Obligations*	
10/01/77-09/30/79	FY78: $50,000	TOTAL: $100,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Reis, D. J.	ARC/Danellis, J. V.	59-Life Sci, NEC

NGR 33-209-002 **Hofstra University** **2925**
Radar studies and application of measurements of ocean wave height and directional spectrum

Period	*Obligations*	
03/28/72-01/31/79	FY78: $28,730	TOTAL: $115,875
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Weissman, W. E.	LARC/Johnson, J. W. LARC/Jones, W. L.	45-Elec Engr

NAS 2-7963 **New York University** **2926**
Pioneer F/G data analysis of zodiacal light experiment

Period	*Obligations*	
01/04/74-06/30/78	FY78: $1,365	TOTAL: $380,121
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Weinberg, J. L.	ARC/Hall, C. F. ARC/Porter, D. L.	11-Astronomy

NAS 8-33099 **New York University** **2927**
Electrophoresis separation (177-E)

Period	*Obligations*	
08/21/78-01/20/79	FY78: $5,354	TOTAL: $5,354
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Johnson, A. J.	MSFC/Reeves, F. A. MSFC/Snyder, R. S.	51-Biology

NGL 33-016-119 **New York University** **2928**
Engine effect on sonic boom; unsteady engine inlet interaction

Period	*Obligations*	
06/05/67-10/31/78	FY78: $36,105	TOTAL: $628,754
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ting, L.	LARC/Darden, C. M. LARC/Carlson, H. W.	41-Aero Engr

NGR 33-016-131 New York University 2929
Hypersonic engine airplane integration
Period 02/27/68-10/31/78 *Obligations* FY78: TOTAL: $1,196,500
Prin. Invest. Agnone, A. M. *NASA Tech. Officer* LARC/Huber, P. W.; LARC/Anderson, G. Y. *CASE Category* 41-Aero Engr

NGR 33-016-167 New York University 2930
Numerical design of transonic shockless airfoils
Period 10/01/70-02/28/79 *Obligations* FY78: $80,000 TOTAL: $695,000
Prin. Invest. Garabedian, P. R. *NASA Tech. Officer* LARC/South, J. C., Jr. *CASE Category* 21-Mathematics

NGR 33-016-196 New York University 2931
Physical properties of molecular clouds
Period 09/01/73-10/31/78 *Obligations* FY78: $32,796 TOTAL: $132,796
Prin. Invest. Glassgold, A. E. *NASA Tech. Officer* HQ-SC/Rosendhal, J. D.; HQ-SC/Roman, N. G. *CASE Category* 13-Physics

NGR 33-016-201 New York University 2932
Study of transonic flow over yawed wings
Period 05/29/73-09/30/78 *Obligations* FY78: $50,000 TOTAL: $253,127
Prin. Invest. Garabedian, P. R.; Jameson, A. *NASA Tech. Officer* ARC/Hicks, R. M.; ARC/Malcolm, G. N. *CASE Category* 41-Aero Engr

NSG 1444 New York University 2933
An experimental and analytical investigation of the aerodynamics of a hypersonic vehicle
Period 08/01/77-07/31/79 *Obligations* FY78: $85,000 TOTAL: $182,987
Prin. Invest. Zakkay, V.; Wang, C. R. *NASA Tech. Officer* LARC/Edwards, C. L.; LARC/Johnston, P. J. *CASE Category* 41-Aero Engr

NSG 1469 New York University 2934
Scattering of acoustic waves by a body in motion
Period 12/01/77-11/30/78 *Obligations* FY78: $35,000 TOTAL: $35,000
Prin. Invest. Ting, L. *NASA Tech. Officer* LARC/Liu, C. H. *CASE Category* 41-Aero Engr

NSG 3059 New York University 2935
Analysis of experiments on hydrodynamics instability in the absence of gravity
Period 06/01/75-12/31/78 *Obligations* FY78: TOTAL: $56,614
Prin. Invest. Keller, J. B.; Ting, L. *NASA Tech. Officer* LERC/Labus, T. L. *CASE Category* 49-Engr, NEC

NSG 5032 New York University 2936
Optimization and machine independence of programming languages
Period 12/01/74-11/30/77 *Obligations* FY78: TOTAL: $96,832
Prin. Invest. Schwartz, J. T. *NASA Tech. Officer* GSFC/Schneck, P. B.; GSFC/DesJardins, R. *CASE Category* 13-Physics

NSG 5034 New York University 2937
Research program in climatology and meteorology
Period 01/01/75-10/31/78 *Obligations* FY78: $110,613 TOTAL: $301,113
Prin. Invest. Isaacson, E.; Stoker, J. J., Jr. *NASA Tech. Officer* GSFC/Halem, M. *CASE Category* 31-Atmos Sci

NSG 5045 New York University 2938
Investigation of the planetary boundary layer in relation to large scale atmospheric dynamics
Period 01/01/75-03/31/78 *Obligations* FY78: TOTAL: $99,154
Prin. Invest. Hoffert, M. I. *NASA Tech. Officer* GSFC/Halem, M. *CASE Category* 31-Atmos Sci

NSG 5130 New York University 2939
Short term numerical weather prediction and very long term climate modelling
Period 10/01/76-09/30/80 *Obligations* FY78: $40,116 TOTAL: $120,312
Prin. Invest. Isaacson, E.; Stoker, J. J., Jr. *NASA Tech. Officer* GSFC/Halem, M. *CASE Category* 31-Atmos Sci

NSG 5133 New York University 2940
Air/sea interaction analysis applied to SEASAT data algorithm
Period 10/01/76-11/30/78 *Obligations* FY78: $40,000 TOTAL: $88,094
Prin. Invest. Hoffert, M. I. *NASA Tech. Officer* GSFC/Halem, M. *CASE Category* 39-Env Sci, NEC

NSG 7169 New York University 2941
Study of the economic impact of space exploration
Period 10/01/75-09/30/77 *Obligations* FY78: TOTAL: $25,630
Prin. Invest. Morgenstern, O. *NASA Tech. Officer* HQ-ET/Gray, E. Z. *CASE Category* 72-Economics

NAS 5-24086 Polytechnic Institute of New York 2942
Wave propagation study
Period 03/07/77-04/07/78 *Obligations* FY78: TOTAL: $15,000
Prin. Invest. Gross, S. H. *NASA Tech. Officer* GSFC/Pirraglia, J. A. *CASE Category* 31-Atmos Sci

NAS 5-25076 **Polytechnic Institute of New York** 2943
Wave propagation study

Period	*Obligations*	
06/01/78-01/01/79	FY78: $15,700	TOTAL: $15,700
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gross, S. H.	GSFC/Pirraglia, J. A.	31-Atmos Sci

NGR 33-006-047 **Polytechnic Institute of New York** 2944
Investigation of diffraction by planetary atmospheres

Period	*Obligations*	
03/25/68-03/31/77	FY78:	TOTAL: $206,509
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gross, S. H.	HQ-ST/Taylor, W. W.	13-Physics
	HQ-ST/Schmerling, E. R.	

NGR 33-006-068 **Polytechnic Institute of New York** 2945
Study of escape of gases from comets, planets, and satellites

Period	*Obligations*	
12/26/72-12/31/78	FY78: $41,832	TOTAL: $198,118
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gross, S. H.	HQ-SL/Murphy, R. E.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	

NGR 33-006-070 **Polytechnic Institute of New York** 2946
Synthesis of polypeptides, sugar phosphates and polynucleotides from intermediates under simulated conditions

Period	*Obligations*	
04/26/73-06/14/79	FY78: $46,500	TOTAL: $269,948
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Eirich, F. R.	HQ-SB/Young, R. S.	12-Chemistry

NSG 1198 **Polytechnic Institute of New York** 2947
Applicability of Brillouin scattering to flow field diagnostics

Period	*Obligations*	
07/01/75-10/31/78	FY78:	TOTAL: $77,243
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lederman, S.	LARC/Hoppe, J. C.	42-Astro Engr
	LARC/Hunter, W. W., Jr.	

NSG 1244 **Polytechnic Institute of New York** 2948
Spline collocation for viscous flow

Period	*Obligations*	
10/01/75-10/31/78	FY78: $29,997	TOTAL: $57,288
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rubin, S. G.	LARC/Rudy, D. H.	41-Aero Engr
	LARC/Swanson, C. R.	

NSG 1248 **Polytechnic Institute of New York** 2949
Calculation of supersonic flow past aircraft with shocks

Period	*Obligations*	
10/01/75-10/31/78	FY78: $59,985	TOTAL: $157,975
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Moretti, G.	LARC/Salas, M. D.	41-Aero Engr
	LARC/Townsend, J. C.	

NSG 1559 **Polytechnic Institute of New York** 2950
Spine collocation for viscous flow over afterbody configurations

Period	*Obligations*	
11/01/78-10/31/79	FY78: $32,992	TOTAL: $32,992
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rubin, S. G.	LARC/Swanson, R. C.	41-Aero Engr
	LARC/Putnam, L. E.	

NSG 2147 **Polytechnic Institute of New York** 2951
Exploratory synthesis of new fire safe polymeric materials

Period	*Obligations*	
05/01/76-05/31/79	FY78: $51,443	TOTAL: $192,924
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wrong, I. M.	ARC/Fohlen, G. M.	12-Chemistry
Zeldin, M.	ARC/Heimbuch, A. H.	
Emert, J.		

NSG 2182 **Polytechnic Institute of New York** 2952
The stability of new transparent polymeric materials

Period	*Obligations*	
09/01/76-08/31/78	FY78:	TOTAL: $23,447
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Pearce, E. M.	ARC/Riccitiello, S. R.	12-Chemistry
	ARC/Parker, J. A.	

NSG 3108 **Polytechnic Institute of New York** 2953
Application of Raman diagnostics to combustion

Period	*Obligations*	
06/01/76-05/31/79	FY78:	TOTAL: $47,987
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lederman, S.	LERC/Will, H. A.	13-Physics

NSG 5284 **Polytechnic Institute of New York** 2954
A morphological study of waves in the thermosphere

Period	*Obligations*	
07/01/78-06/30/79	FY78: $24,652	TOTAL: $24,652
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gross, S. H.	GSFC/Spencer, N. W.	31-Atmos Sci
Reber, C. A.		

NASW 3142 **Pratt Institute** 2955
Aeronautics and Space symposium

Period	*Obligations*	
01/17/78-04/30/78	FY78: $29,100	TOTAL: $29,100
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Randall, J. T., Jr.	HQ-U/Monroe, R.	99-Multi-Discip

NSG 7321 **Queens College** 2956
Phase stability and elastic wave velocity determinations for stoichiometric FeS

Period	*Obligations*	
02/01/77-11/30/78	FY78:	TOTAL: $74,578
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Takahashi, T.	HQ-SL/Quaide, W. L.	32-Geological Sci

NAS 2-10006 **Rensselaer Polytechnic Institute** **2957**
Sequential decoder for Pioneer/Venus reverse playback telemetry

Period *Obligations*
08/09/78-10/01/78 FY78: $18,500 TOTAL: $18,500

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Modestino, J. W. ARC/Ramos, R. 31-Atmos Sci

NAS 8-26146 **Rensselaer Polytechnic Institute** **2958**
Growth of single crystals by vapor transport in zero gravity environment

Period *Obligations*
06/04/70-10/06/78 FY78: TOTAL: $262,000

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Wiedmann, H. MSFC/Davidson, M. C.
MSFC/Thomas, P. E. 47-Materials Engr

NAS 8-32425 **Rensselaer Polytechnic Institute** **2959**
Dentritic solidification at small supercooling

Period *Obligations*
03/01/77-03/31/79 FY78: $60,900 TOTAL: $119,900

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Glicksman, M. E. MSFC/Reeves, F. A. 47-Materials Engr
MSFC/Chassay, R. P.

NAS 8-32639 **Rensselaer Polytechnic Institute** **2960**
Space processing crystal growth from the vapor phase

Period *Obligations*
09/20/77-12/31/78 FY78: TOTAL: $37,689

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Wiedemeier, H. MSFC/Davidson, M. C.
MSFC/Thomas, P. E. 19-Phys Sci, NEC

NAS 8-32690 **Rensselaer Polytechnic Institute** **2961**
Solidification processes involving solutes

Period *Obligations*
07/24/78-07/23/79 FY78: $61,000 TOTAL: $61,000

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Glicksman, M. E. MSFC/Lacy, L. L. 12-Chemistry
MSFC/Thomas, P. E.

NAS 8-32936 **Rensselaer Polytechnic Institute** **2962**
Vapor growth of alloy-type semiconductor crystals experiment

Period *Obligations*
03/20/78-03/20/83 FY78: $152,000 TOTAL: $152,000

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Wiedemeier, H. MSFC/Williams, J. R. 47-Materials Engr
Davidson, M. C. MSFC/Davidson, M. C.
Irene, E. A.

NAS 8-33074 **Rensselaer Polytechnic Institute** **2963**
Study on nucleation and growth of immiscible phases

Period *Obligations*
06/01/78-05/20/79 FY78: $32,000 TOTAL: $32,000

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Lacy, L. L. MSFC/Lacy, L. L. 13-Physics
Ross, S. MSFC/Witherow, W. K.
Nishioka, G.

NAS 9-15109 **Rensselaer Polytechnic Institute** **2964**
Determination of radiative exchange factors for three-dimensional configuration with non-diffuse, non-gray surfaces

Period *Obligations*
07/01/76-05/01/79 FY78: $10,000 TOTAL: $32,900

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Modest, M. F. JSC/Kuznetz, L. H. 47-Materials Engr

NAS 9-15453 **Rensselaer Polytechnic Institute** **2965**
Solar power satellite rectenna design study

Period *Obligations*
02/03/78-12/01/78 FY78: $35,000 TOTAL: $35,000

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Gutmann, R. J. JSC/Kelley, J. S. 45-Elec Engr
Borrego, J. M.

NGL 33-018-003 **Rensselaer Polytechnic Institute** **2966**
Interdisciplinary materials research including fundamental physics & chemistry of materials, environmental effects, and related problems.

Period *Obligations*
09/01/70-04/30/81 FY78: $400,000 TOTAL: $5,309,400

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Wiberly, S. E. HQ-RW/Gilstad, D. A.
Ansell, G. S. 47-Materials Engr
HQ-RW/Salkind, M. J.

NGL 33-018-007 **Rensselaer Polytechnic Institute** **2967**
Investigation of composition & chemical behavior of atmosphere of Venus

Period *Obligations*
06/19/62-08/31/80 FY78: TOTAL: $1,487,400

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Harteck, P. HQ-SL/Fellows, R. F. 31-Atmos Sci
HQ-SL/Brunk, W. E.

NGL 33-018-091 **Rensselaer Polytechnic Institute** **2968**
Analysis and design of a capsule landing system and surface vehicle control system for Mars exploration

Period *Obligations*
06/14/67-10/31/77 FY78: TOTAL: $815,000

Prin. Invest. *NASA Tech. Officer* *CASE Category*
Yerazunis, S. W. HQ-SL/Tarver, P. 49-Engr, NEC
HQ-SL/Herman, D. H.

NGR 33-018-148 **Rensselaer Polytechnic Institute** 2969
Photochemical investigations of the atmosphere of other planets

Period	*Obligations*	
08/27/70-10/31/78	FY78: $47,310	TOTAL: $302,310
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ferris, J. P.	HQ-SB/Young, R. S.	12-Chemistry

NSG 1360 **Rensselaer Polytechnic Institute** 2970
Generation of stable high secondary electron yield surfaces by ion implantation for electron multiplier and P-N junctions for mass spectrometric instruments

Period	*Obligations*	
12/01/76-04/30/78	FY78: $2,253	TOTAL: $22,253
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
White, F. A.	LARC/Wood, G. M.	13-Physics

NSG 1510 **Rensselaer Polytechnic Institute** 2971
Improved high modulus carbon fibers

Period	*Obligations*	
04/01/78-03/31/79	FY78: $206,300	TOTAL: $206,300
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ansell, G. S.	LARC/Swann, R. T. LARC/Brewer, W. D.	47-Materials Engr

NSG 3170 **Rensselaer Polytechnic Institute** 2972
Determination of physical and chemical states of lubricants in concentrated contacts using infrared Fourier transform spectroscopy

Period	*Obligations*	
01/01/78-12/31/78	FY78: $36,000	TOTAL: $36,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Laver, J. A.	LERC/Jones, W. R., Jr.	13-Physics

NSG 7065 **Rensselaer Polytechnic Institute** 2973
Structure-function studies on bacillus stearothermophilus

Period	*Obligations*	
06/01/74-08/30/79	FY78: $22,794	TOTAL: $119,306
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wedler, F. C.	HQ-SB/Young, R. S.	51-Biology

NSG 7184 **Rensselaer Polytechnic Institute** 2974
Data acquisition and path selection decision making for an autonomous roving vehicle

Period	*Obligations*	
11/01/75-12/31/78	FY78: $35,000	TOTAL: $100,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Shen, C. N. Yerazunis, S. W.	HQ-RE/Gevarter, W. B. JPL/Paine, G.	19-Phys Sci, NEC

NSG 7345 **Rensselaer Polytechnic Institute** 2975
Biological adaptation to low temperature: A study of the molecular mechanism governing the responses of the protein synthesizing apparatuses to low temperature

Period	*Obligations*	
04/01/77-03/31/79	FY78: $34,100	TOTAL: $69,100
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Pope, D. H.	HQ-SB/Young, R. S.	51-Biology

NSG 7369 **Rensselaer Polytechnic Institute** 2976
Autonomous control of roving vehicles for unmanned exploration of the planets

Period	*Obligations*	
06/01/77-05/31/79	FY78: $40,000	TOTAL: $80,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Yerazunis, S. W. Frederick, D. K. Gisser, D. G.	HQ-RE/Gevarter, W. B. JPL/Paine, G.	49-Engr, NEC

NAS 8-32485 **State Univ of New York - Albany** 2977
Skylab contamination results experiments

Period	*Obligations*	
06/16/77-12/15/77	FY78:	TOTAL: $13,900
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Schuerman, D. W.	MSFC/Clifton, K. S. MSFC/Shriver, E. L.	31-Atmos Sci

NAS 8-32893 **State Univ of New York - Albany** 2978
Night-time and daytime orbital survey of lightning and convective phenomena experiment support

Period	*Obligations*	
05/03/78-05/02/80	FY78: $5,000	TOTAL: $5,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Vonnegut, B.	MSFC/Vaughn, O. H., Jr. MSFC/Anderson, B. J.	39-Env Sci, NEC

NAS 8-32947 **State Univ of New York - Albany** 2979
Static tube zero g electrophoresis of human pancreatic islets of langerhans cells

Period	*Obligations*	
04/07/78-11/14/80	FY78: $88,000	TOTAL: $88,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
VanOss, C. J.	MSFC/Williams, J. R. MSFC/Snyder, R. S.	51-Biology

NAS 9-15538 **State Univ of New York - Albany** 2980
Measurements of ice nucleus concentrations in Titan rocket exhaust clouds (II)

Period	*Obligations*	
06/29/78-10/31/78	FY78: $20,300	TOTAL: $20,300
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lala, G. G.	JSC/Robbins, D. E.	31-Atmos Sci

NSG 3095 **State Univ of New York - Albany** 2981
Fundamentals of radiation tolerance in silicon solar cells

Period	*Obligations*	
01/26/76-04/25/79	FY78: $65,000	TOTAL: $130,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Corbett, J. W.	LERC/Weinberg, I. LERC/Brandhorst, H. R., Jr.	39-Env Sci, NEC

NSG 3138 **State Univ of New York - Albany** **2982**
Analysis of global air sampling program data

Period	*Obligations*	
01/10/77-03/09/79	FY78: $76,063	TOTAL: $150,923
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mohnen, V. A.	LERC/Holdeman, J. D.	31-Atmos Sci
Hogan, A. W.	LERC/Lezberg, E. A.	
Falconer, P. D.		

NSG 5274 **State Univ of New York - Albany** **2983**
Global tectonic studies

Period	*Obligations*	
05/15/78-05/14/79	FY78: $34,964	TOTAL: $34,964
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Burke, K.	GSFC/Frey, H. V.	32-Geological Sci
Delong, S. E.	GSFC/Mead, G. D.	
Dewey, J. F.		

NSG 7093 **State Univ of New York - Albany** **2984**
Photoelectric studies of the night glow

Period	*Obligations*	
12/23/74-09/30/78	FY78: $34,895	TOTAL: $157,405
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Weinberg, J. L.	HQ-SL/Donn, B. D.	31-Atmos Sci
	HQ-SL/Murphy, R. E.	

NSG 7222 **State Univ of New York - Albany** **2985**
Two-dimensional transport and aerosol model

Period	*Obligations*	
02/01/76-09/30/78	FY78:	TOTAL: $77,560
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kiang, C. S.	HQ-ST/Greenwood, L. R.	31-Atmos Sci
Mohnen, V. A.	HQ-ST/Tilford, S. G.	

NSG 7241 **State Univ of New York - Albany** **2986**
Studies of background starlight

Period	*Obligations*	
07/01/76-11/30/78	FY78:	TOTAL: $41,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Weinberg, J. L.	HQ-SC/Roman, N. G.	11-Astronomy
	HQ-SC/Rosendhal, J. D.	

NSG 7353 **State Univ of New York - Albany** **2987**
Microwave analogue studies of light scattering by small particles

Period	*Obligations*	
04/01/77-05/31/78	FY78: $20,496	TOTAL: $30,475
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Schuerman, D. W.	HQ-SL/Donn, B. D.	11-Astronomy
	HQ-SL/Brunk, W. E.	

NSG 8040 **State Univ of New York - Albany** **2988**
Research study of data analysis, Skylab zodiacal light experiment

Period	*Obligations*	
06/28/76-11/01/79	FY78:	TOTAL: $88,594
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Weinberg, J. L.	MSFC/Gary, G. A.	11-Astronomy

NSG 9028 **State Univ of New York - Albany** **2989**
Non-invasive technique for measurement of cardiac output for space shuttle use

Period	*Obligations*	
05/30/75-09/30/78	FY78:	TOTAL: $137,950
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Farhi, L. E.	JSC/Rummel, J. A.	51-Biology

NAS 8-31953 **State Univ of New York - Buffalo** **2990**
Study of chromatographic separation processes under zero-gravity conditions

Period	*Obligations*	
07/30/76-11/30/77	FY78:	TOTAL: $37,253
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Grusha, E.	MSFC/Nerren, B. H.	12-Chemistry
	MSFC/Ives, R. E.	

NGR 33-015-108 **State Univ of New York - Buffalo** **2991**
Planetary curriculum and related geologic research

Period	*Obligations*	
06/02/70-01/31/79	FY78: $44,349	TOTAL: $284,562
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
King, J. S.	HQ-SL/Dwornik, S.E.	32-Geological Sci
	HQ-SL/Boyce, J. M.	

NSG 7071 **State Univ of New York - Buffalo** **2992**
Experimental and theoretical investigation for the suppression of plasma arc drops in thermionic converters

Period	*Obligations*	
07/01/74-04/15/78	FY78:	TOTAL: $250,928
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Shaw, D. T.	LERC/Morris, J. F.	13-Physics

NAS 1-10493 **State Univ of New York - Stony Brook** **2993**
Participation in the science planning for the Viking 1975 missions in the area of molecular analysis

Period	*Obligations*	
01/18/71-03/31/79	FY78:	TOTAL: $182,288
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Owens, T.	LARC/Williams, T. S., Jr.	
	LARC/Glenny, W. R.	39-Env Sci, NEC

NAS 8-32904 **State Univ of New York - Stony Brook** **2994**
Scientific investigations in support of the space telescope project

Period	*Obligations*	
02/01/78-01/31/84	FY78: $126,000	TOTAL: $126,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Caldwell, J. J.	MSFC/O'Dell, C. R.	11-Astronomy

NCA 2-760801 **State Univ of New York - Stony Brook** **2995**
Laboratory spectroscopy at ultralong pathlengths

Period	*Obligations*	
10/01/77-12/31/78	FY78: $11,000	TOTAL: $11,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lutz, B. L.	ARC/Boese, R. W.	19-Phys Sci, NEC

NGL 33-015-130 State Univ of New York - Stony Brook 2996
Lunar sample analysis

Period	*Obligations*	
02/11/71-01/31/81	FY78: $83,132	TOTAL: $907,297
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bence, A. E.	JSC/Harris, J. W.	13-Physics

NGL 33-015-174 State Univ of New York - Stony Brook 2997
Lunar sample analysis

Period	*Obligations*	
02/01/73-01/31/79	FY78: $98,895	TOTAL: $526,051
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Schaeffer, O. A.	JSC/Harris, J. W.	12-Chemistry

NGR 33-015-139 State Univ of New York - Stony Brook 2998
Quantitative spectroscopic measurements on the principal constituents in planetary atmospheres

Period	*Obligations*	
04/12/71-05/31/80	FY78:	TOTAL: $264,090
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Varanasi, P.	HQ-SL/Brunk, W. E. HQ-SL/Mitz, M. A.	31-Atmos Sci

NGR 33-015-141 State Univ of New York - Stony Brook 2999
Spectroscopic observations of the planets

Period	*Obligations*	
01/26/71-08/31/78	FY78: $29,936	TOTAL: $203,471
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Owen, T.	HQ-SL/Brunk, W. E. HQ-SL/Quaide, W. L.	11-Astronomy

NGR 33-015-165 State Univ of New York - Stony Brook 3000
Planetary atmospheres research

Period	*Obligations*	
11/01/72-12/31/78	FY78: $92,901	TOTAL: $352,466
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Owen, T.	GSFC/Hansen, J. E.	31-Atmos Sci

NGR 33-015-169 State Univ of New York - Stony Brook 3001
Organic molecules in the atmosphere of Jupiter; investigation of colors in Jovian cloud deck

Period	*Obligations*	
10/16/72-11/30/76	FY78:	TOTAL: $80,637
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Owen, T.	HQ-SB/Young, R. S.	12-Chemistry

NGR 33-015-180 State Univ of New York - Stony Brook 3002
Cosmic rays in interplanetary space

Period	*Obligations*	
01/07/74-09/30/79	FY78: $24,800	TOTAL: $99,253
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Forman, M. A.	HQ-SC/Fishman, G. J. HQ-SC/Opp, A. G.	11-Astronomy

NSG 2264 State Univ of New York - Stony Brook 3003
Far infrared observations of dark clouds using lear jet observatory

Period	*Obligations*	
10/01/77-09/30/78	FY78: $12,100	TOTAL: $12,100
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Simon, M.	ARC/Cameron, R. M. ARC/Mason, R. H.	11-Astronomy

NSG 3051 State Univ of New York - Stony Brook 3004
Combustion of porous solids at reduced gravitational conditions

Period	*Obligations*	
06/01/75-09/30/78	FY78: $2,000	TOTAL: $76,703
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Berlad, A. L.	LERC/Cochran, T. H.	43-Chem Engr

NSG 5102 State Univ of New York - Stony Brook 3005
Atmospheric pollution development and applications of regional scale dispersion models

Period	*Obligations*	
03/01/76-02/28/79	FY78: $55,000	TOTAL: $189,458
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hogan, J.	GSFC/Stewart, R. W.	31-Atmos Sci

NSG 5125 State Univ of New York - Stony Brook 3006
Research of thin-film Josephson-junction detector for millimeter and submillimeter wavelength applications

Period	*Obligations*	
11/01/76-12/31/78	FY78: $10,000	TOTAL: $42,101
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kao, Y. H.	GSFC/Kerr, A. R. GSFC/Thaddeus, P.	11-Astronomy

NSG 5250 State Univ of New York - Stony Brook 3007
Ultraviolet observations of planets, satellites and comets with international ultraviolet Explorer

Period	*Obligations*	
03/01/78-02/28/79	FY78: $16,993	TOTAL: $16,993
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Owen, T.	GSFC/Boggess, A. GSFC/West, D. K.	11-Astronomy

NSG 5271 State Univ of New York - Stony Brook 3008
Forecasting research to assess the role of differential advection as a severe storm predictor

Period	*Obligations*	
04/15/78-04/14/79	FY78: $21,000	TOTAL: $21,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Atlas, R. M.	GSFC/Adler, R. F.	31-Atmos Sci

NSG 7003 State Univ of New York - Stony Brook 3009
Research in grating technology and related areas

Period	*Obligations*	
11/01/73-12/31/78	FY78:	TOTAL: $83,999
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Stroke, G. W.	HQ-ST/Bohlin, J. D.	11-Astronomy

NSG 7150 **State Univ of New York - Stony Brook** **3010**
A synthesis of lunar mineral data

Period	*Obligations*	
07/11/75-09/30/76	FY78:	TOTAL: $43,096
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Papike, J. J.	HQ-SL/Williams, R. J.	32-Geological Sci

NSG 7225 **State Univ of New York - Stony Brook** **3011**
Argon dating of terrestrial shocked rocks

Period	*Obligations*	
05/01/76-04/30/77	FY78:	TOTAL: $25,916
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Schaeffer, O. A.	HQ-SL/Williams, R. J.	32-Geological Sci
	HQ-SL/Flinn, E. A.	

NSG 7270 **State Univ of New York - Stony Brook** **3012**
Cells, embryos and development in space

Period	*Obligations*	
09/01/76-10/31/78	FY78: $60,000	TOTAL: $130,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Krikorian, A. D.	HQ-SB/Halstead, T. W.	51-Biology
Steward, F. C.	HQ-SB/Young, R. S.	

NSG 7286 **State Univ of New York - Stony Brook** **3013**
Infrared spectroscopy of Jupiter and Saturn

Period	*Obligations*	
09/01/76-05/31/78	FY78:	TOTAL: $35,295
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Knacke, R. F.	HQ-SL/Brunk, W. E.	11-Astronomy

NSG 7320 **State Univ of New York - Stony Brook** **3014**
Theoretical planetary physics

Period	*Obligations*	
04/01/77-03/31/79	FY78: $24,357	TOTAL: $49,937
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Caldwell, J. J.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Quaide, W. L.	

NSG 9013 **State Univ of New York - Stony Brook** **3015**
Dating of lunar cratering events and rates of lunar surface processes

Period	*Obligations*	
07/15/74-01/31/79	FY78: $48,920	TOTAL: $302,669
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hartung, J. B.	JSC/Harris, J. W.	32-Geological Sci

NSG 9044 **State Univ of New York - Stony Brook** **3016**
Petrologic and stratigraphic studies of lunar drill cores and drive tubes

Period	*Obligations*	
09/01/76-01/31/81	FY78: $98,678	TOTAL: $287,978
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Papike, J. J.	JSC/Harris, J. W.	13-Physics

NCA 2-765801 **State Univ of New York - Upstate Med Ctr** **3017**
Space flight associated alterations inerythrocyte membranes

Period	*Obligations*	
06/01/78-05/31/80	FY78: $19,980	TOTAL: $19,980
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Landaw, S. A.	ARC/Leon, H. A.	53-Other Medical

NGR 33-219-002 **State Univ of New York Col - Geneseo** **3018**
Comparison of Lyman 2 and HE 1 & 10830 line structures and variations in early type star atmosphere

Period	*Obligations*	
05/14/73-06/30/77	FY78:	TOTAL: $6,800
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Meisel, D. D.	HQ-SC/Roman, N. G.	11-Astronomy

NSG 5077 **State Univ of New York College - Purchase** **3019**
Spectral and monte carlo predictability studies

Period	*Obligations*	
09/01/75-02/28/79	FY78: $17,169	TOTAL: $44,857
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Tenenbaum, J.	GSFC/Halem, M.	31-Atmos Sci

NSG 1462 **Syracuse University** **3020**
Magnetization measurements on bismuth manganese subjected to static and dynamic stresses as a function of temperature

Period	*Obligations*	
11/01/77-10/31/78	FY78: $32,500	TOTAL: $32,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Schroder, K.	LARC/Stermer, R. L.	47-Materials Engr
	LARC/Hayes, P. J.	

NGR 33-032-004 **Union College** **3021**
Optically pumped submillimeter waveguide maser amplifiers and oscillators

Period	*Obligations*	
04/15/74-04/14/78	FY78:	TOTAL: $85,978
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Galantowicz, A.	GSFC/McAvoy, N.	13-Physics
	GSFC/McElroy, J. H.	

NAS 5-20028 **University of Rochester** **3022**
Optical components associated with investigation of solar phenomena in ultraviolet region

Period	*Obligations*	
01/15/74-09/30/78	FY78:	TOTAL: $49,350
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Baumeister, P. W.	GSFC/Osantowski, J. F.	13-Physics

NSG 2198 **University of Rochester** **3023**
Energy transfer between molecular collision systems and laser radiation fields

Period	*Obligations*	
12/31/76-12/31/78	FY78: $65,000	TOTAL: $130,408
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
George, T. F.	ARC/Stallcop, J. R.	13-Physics
Zimmerman, I. H.	ARC/Billman, K. W.	
Lam, K. S.		

NEW YORK (Continued)

NSG 5054 **University of Rochester** **3024**
Investigation of the radius and composition of Sirius B from far UV observations

Period	*Obligations*	
01/01/75-12/31/77	FY78:	TOTAL: $14,124
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Savedoff, M. P.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 7366 **University of Rochester** **3025**
Microbial adaptation in extreme environments; antarctic yeasts

Period	*Obligations*	
07/25/77-08/24/77	FY78:	TOTAL: $2,660
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Vishniac, H. S.	HQ-SB/Young, R. S.	51-Biology

NSG 7359 **Vassar College** **3026**
OAO data analysis

Period	*Obligations*	
06/01/77-05/31/78	FY78:	TOTAL: $9,371
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hutchinson, J. L.	HQ-SC/Rosendhal, J. D. HQ-SC/Roman, N. G.	11-Astronomy

NGL 33-023-018 **Yeshiva University** **3027**
Research in space physics

Period	*Obligations*	
06/29/66-03/31/77	FY78:	TOTAL: $660,457
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Finkelstein, D.	GSFC/Hansen, J. E.	11-Astronomy

NSG 3123 **Yeshiva University** **3028**
Investigation of the topographical features of surface carrier concentrations and lifetime determinations in silicon solar cells

Period	*Obligations*	
10/01/76-10/30/78	FY78: $25,001	TOTAL: $49,524
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Pollak, F.	LERC/Godlewski, M. P.	45-Elec Engr

NSG 7454 **York College** **3029**
Irradiation effects on surface of Moon, Mercury asteroids and solar system bodies

Period	*Obligations*	
06/01/78-05/30/79	FY78: $30,580	TOTAL: $30,580
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Spergel, M. S.	HQ-SL/Quaide, W. L. HQ-LU/Pohly, J. G.	13-Physics

NORTH CAROLINA

NGT 34-017-001 **Bennett College** **3030**
Training of undergraduate students in sciences and engineering

Period	*Obligations*	
06/01/74-05/31/78	FY78:	TOTAL: $28,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sayles, J. N.	HQ-LU/Pohly, J. G. HQ-U/Jenkins, H. G.	99-Multi-Discip

NAS 5-22475 **Duke University** **3031**
Direct energy transfer power subsystem modeling and analysis

Period	*Obligations*	
06/20/75-06/20/77	FY78:	TOTAL: $20,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wilson, T. G. Owen, H. A., Jr.	GSFC/Rodriguez, G. E.	45-Elec Engr

NAS 5-25351 **Duke University** **3032**
Dynamics Explorer power subsystem study

Period	*Obligations*	
09/25/78-07/08/79	FY78: $15,000	TOTAL: $15,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wilson, T. G. Owen, H. A., Jr.	GSFC/Rodriguez, G. E.	45-Elec Engr

NGL 34-001-001 **Duke University** **3033**
Research on satellite electrical power conversion systems and circuit protection

Period	*Obligations*	
02/19/65-02/28/79	FY78:	TOTAL: $966,031
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wilson, T. G.	GSFC/Rodriguez, G. E. GSFC/Pasciutti, E. R.	45-Elec Engr

NSG 3157 **Duke University** **3034**
Design feasibility of high-power lightweight dc-to-dc converters for space power applications

Period	*Obligations*	
07/01/77-05/31/79	FY78: $105,000	TOTAL: $118,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wilson, T. G. Owen H. A., Jr.	LERC/Hansen, I. G.	45-Elec Engr

NSG 3160 **Duke University** **3035**
Acceleration of convergence

Period	*Obligations*	
06/01/77-05/31/79	FY78: $11,141	TOTAL: $21,483
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Smith, D. A.	LERC/Ford, W. F.	21-Mathematics

NAS 5-24101 **North Carolina A&T State University** **3036**
Feasibility study for conducting experimental research in curriculum sharing

Period	*Obligations*	
04/14/77-08/13/78	FY78:	TOTAL: $30,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Williams, L. J.	GSFC/Henry, V.	45-Elec Engr

NSG 1296 **North Carolina A&T State University** **3037**
Effect of temperature on composite sandwich structures subjected to low velocity impact

Period	*Obligations*	
05/17/76-08/16/79	FY78:	TOTAL: $76,617
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sharma, A. V.	LARC/Rhodes, M. D.	47-Materials Engr
	LARC/Mikulas, M. M., Jr.	

NSG 1346 **North Carolina A&T State University** **3038**
Investigation of laser-induced parametric interactions in optical waveguides and fibers

Period	*Obligations*	
10/15/76-01/14/78	FY78:	TOTAL: $29,815
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Yu, C.	LARC/Allario, F.	13-Physics

NSG 1390 **North Carolina A&T State University** **3039**
Material growth and characterization directed toward improving III-V heterojunction solar cells

Period	*Obligations*	
02/01/77-01/31/79	FY78: $150,000	TOTAL: $300,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Alexander, W. E.	LARC/Hutchby, J. A.	45-Elec Engr
	LARC/Hendricks, H. D.	

NSG 1516 **North Carolina A&T State University** **3040**
Patterns of residual stresses within complex welded steel structures

Period	*Obligations*	
04/15/78-04/14/79	FY78: $32,415	TOTAL: $32,415
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Botros, B. M.	LARC/Buckley, J. D.	47-Materials Engr

NSG 8045 **North Carolina A&T State University** **3041**
Research study of composites as substrate materials in large space telescopes

Period	*Obligations*	
10/15/76-01/31/79	FY78: $25,000	TOTAL: $48,155
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sharma, A. V.	MSFC/Stuckey, J. M.	46-Mech Engr

NSG 5120 **North Carolina Central University** **3042**
Optically pumped submillimeter waves and applications

Period	*Obligations*	
06/07/76-07/31/79	FY78: $37,917	TOTAL: $111,928
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Dutta, J. M.	GSFC/McAvoy, N.	13-Physics
Jones, C. R.		

NAS 6-2617 **North Carolina State Univ. - Raleigh** **3043**
Wind wave current interaction studies

Period	*Obligations*	
02/07/75-02/28/78	FY78:	TOTAL: $138,194
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Long, S. R.	WFC/Stanley, H. R.	33-Oceanography
	WFC/Huang, N. E.	

NGL 34-002-095 **North Carolina State Univ. - Raleigh** **3044**
Acoustic energy effects on sleep and human performance: The effects of certain fundamental parameters of acoustic stimuli

Period	*Obligations*	
04/11/69-08/31/79	FY78:	TOTAL: $395,582
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Horvath, J. J.	LARC/Mayes, W. H.	69-Psych, NEC
	LARC/Cawthorne, J. M.	

NGR 34-002-188 **North Carolina State Univ. - Raleigh** **3045**
Deployable reflector antenna study

Period	*Obligations*	
10/18/72-12/31/78	FY78: $19,105	TOTAL: $87,190
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kauffman, J. F.	LARC/Croswell, W. F.	45-Elec Engr
	LARC/Cockrell, C. R.	

NGR 34-002-195 **North Carolina State Univ. - Raleigh** **3046**
Theoretical analysis of current voltage characteristics of solar cells

Period	*Obligations*	
06/01/73-12/31/78	FY78:	TOTAL: $137,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hauser, J. R.	LERC/Godlewski, M. P.	45-Elec Engr
	LERC/Brandhorst, H. W., Jr.	

NSG 1058 **North Carolina State Univ. - Raleigh** **3047**
Analyses of nuclear induced plasmas by means of kinetic theory

Period	*Obligations*	
07/01/74-06/30/79	FY78: $31,100	TOTAL: $151,100
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hassan, H. A.	LARC/Meador, W. E.	13-Physics

NSG 1077 **North Carolina State Univ. - Raleigh** **3048**
Estimate the performance and dynamic response characteristics of an advanced technology light twin aircraft and compare with flight test results

Period	*Obligations*	
08/15/74-12/31/78	FY78: $49,000	TOTAL: $184,736
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Smetana, F. O.	LARC/Crane, H. L.	41-Aero Engr

NSG 1116 **North Carolina State Univ. - Raleigh** **3049**
Theoretical study of heterojunction and graded band gap type solar cells

Period	*Obligations*	
10/14/74-07/31/78	FY78:	TOTAL: $60,900
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hauser, J. R.	LARC/Hutchby, J. A.	45-Elec Engr
	LARC/Hendricks, H. D.	

NSG 1205 **North Carolina State Univ. - Raleigh** **3050**
Research program in aeroacoustics for noise control of general aviation aircraft

Period	*Obligations*	
07/01/75-06/30/79	FY78: $29,000	TOTAL: $116,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hart, F. D.	LARC/Mayes, W. H.	13-Physics
Bailey, J. R.	LARC/Cawthorn, J. W.	

NSG 1353 **North Carolina State Univ. - Raleigh** **3051**
Charge transfer devices for remote sensing applications

Period	*Obligations*	
11/22/76-01/31/79	FY78: $35,000	TOTAL: $64,777
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Snyder, W. E.	LARC/Husson, C.	45-Elec Engr
	LARC/Benz, H. F.	

NSG 1355 **North Carolina State Univ. - Raleigh** **3052**
A study of real-time computer graphic display technology for aeronautical applications

Period	*Obligations*	
01/01/77-03/31/79	FY78: $23,705	TOTAL: $43,964
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Stroh, R. W.	LARC/Hatfield, J. J.	45-Elec Engr
	LARC/Batson, V. M.	

NSG 1377 **North Carolina State Univ. - Raleigh** **3053**
Investigation of flow noise from streamlined and blunt bodies trailing edge effects

Period	*Obligations*	
01/01/77-12/31/78	FY78: $35,000	TOTAL: $77,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hodgson, T. H.	LARC/Brooks, T. F.	41-Aero Engr
	LARC/Preisser, J. S.	

NSG 1437 **North Carolina State Univ. - Raleigh** **3054**
Investigation of aerodynamic characteristic of subsonic wings

Period	*Obligations*	
07/25/77-05/15/79	FY78:	TOTAL: $18,965
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Dejarnette, F. R.	LARC/Campbell, J. F.	41-Aero Engr

NSG 1463 **North Carolina State Univ. - Raleigh** **3055**
Nuclear magnetic resonance and infrared study of moisture in epoxy resins and resin-graphite fiber composites

Period	*Obligations*	
11/01/77-10/31/79	FY78: $36,426	TOTAL: $36,426
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Memory, J. D.	LARC/Long, E. R., Jr.	
Fornes, R. E.		47-Materials Engr

NSG 1532 **North Carolina State Univ. - Raleigh** **3056**
Numerical methods for problems involving the drazin inverse

Period	*Obligations*	
06/01/78-09/30/78	FY78: $6,682	TOTAL: $6,682
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Meyer, C. D., Jr.	LARC/Shoosmith, J. N.	21-Mathematics

NSG 1549 **North Carolina State Univ. - Raleigh** **3057**
Constrained interpolation and approximation with application to computer aided geometric design

Period	*Obligations*	
09/01/78-08/31/79	FY78: $27,725	TOTAL: $27,725
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Roulier, J. A.	LARC/Park, S. K.	22-Computer Science
McAllister, D. F.	LARC/Smith, R. E.	

NSG 1562 **North Carolina State Univ. - Raleigh** **3058**
Study of the effects of high energy radiation on the mechanical properties of graphite-fiber reinforced epoxy resins

Period	*Obligations*	
10/01/78-01/31/79	FY78: $10,128	TOTAL: $10,128
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Memory, J. D.	LARC/Slemp, W. S.	13-Physics
Fornes, R. E.	LARC/Long, E. R., Jr.	

NAS 9-14697 **University of North Carolina - Chapel Hill** **3059**
Role of natriuretic peptides in the regulation of urinary sodium excretion

Period	*Obligations*	
06/23/75-06/23/79	FY78: $30,000	TOTAL: $130,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gitelman, H. J.	JSC/Leach, C. S.	59-Life Sci, NEC

OHIO

NSG 7022 **Bowling Green State University** **3060**
A radially streaming particle model for Seyfert galaxy nuclei and quasistellar objects

Period	*Obligations*	
07/01/74-12/31/77	FY78:	TOTAL: $65,083
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ptak, R. L.	HQ-SC/Roman, N. G.	11-Astronomy
Stoner, R. E.	HQ-SC/Rosendhal, J. D.	

NAS 3-21046 **Case Western Reserve University** **3061**
Spacelab experiment on surface tension driven convection

Period	*Obligations*	
09/16/77-12/31/79	FY78: $44,995	TOTAL: $97,730
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ostrach, S.	LERC/Labus, T. M.	46-Mech Engr

NAS 3-21365 **Case Western Reserve University** **3062**
Low sidelobe level low-cost earth station antennas for the twelve GHz broadcasting satellite service

Period	*Obligations*	
06/06/78-06/06/79	FY78: $59,601	TOTAL: $59,601
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Collin, R. E.	LERC/Smetana, J.	49-Engr, NEC

NAS 5-24144 **Case Western Reserve University** **3063**
Axially grooved heat pipe study

Period	*Obligations*	
04/25/77-09/25/78	FY78:	TOTAL: $13,257
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kamotani, Y.	GSFC/Ollendorf, S. GSFC/McIntosh, R.	46-Mech Engr

NAS 8-31802 **Case Western Reserve University** **3064**
Convective analysis on various crystal growth systems

Period	*Obligations*	
03/15/76-06/14/77	FY78:	TOTAL: $30,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ostrach, S.	MSFC/Schafer, C. F.	46-Mech Engr

NAS 8-31907 **Case Western Reserve University** **3065**
Convection in crystal growing

Period	*Obligations*	
03/15/76-06/30/78	FY78:	TOTAL: $39,995
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ostrach, S.	MSFC/Schafer, C. F. MSFC/Fichtl, G. H.	12-Chemistry

NAS 8-33015 **Case Western Reserve University** **3066**
Surface tension driven convection phenomena experiment

Period	*Obligations*	
05/23/78-05/23/79	FY78: $101,375	TOTAL: $101,375
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ostrach, S.	MSFC/Williams, J. R. MSFC/Zwiener, J. M.	13-Physics

NGL 36-003-094 **Case Western Reserve University** **3067**
The effects of deformation on dispersion

Period	*Obligations*	
10/18/66-08/31/78	FY78:	TOTAL: $275,555
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ebert, L. J.	LERC/Glasgow, T.K.	47-Materials Engr

NGR 36-027-050 **Case Western Reserve University** **3068**
Catalysts for electrochemical generation of oxygen

Period	*Obligations*	
02/22/72-05/14/79	FY78: $50,000	TOTAL: $344,747
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Yeager, E. Cahan, B. D.	ARC/Quattrone, P. D.	12-Chemistry

NGR 36-027-051 **Case Western Reserve University** **3069**
Stress corrosion cracking & hydrogen embrittlement

Period	*Obligations*	
06/02/72-08/15/77	FY78:	TOTAL: $50,389
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hehemann, R. H. Truhan, J. J.	LERC/Gray, H. R.	47-Materials Engr

NGR 36-027-064 **Case Western Reserve University** **3070**
Study of effects of layer control on shock wave turbulent boundary layer interactions in supersonics inlets

Period	*Obligations*	
08/01/73-09/30/78	FY78: $39,283	TOTAL: $161,007
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Reshotko, E.	LERC/Bishop, A. R.	41-Aero Engr

NGT 36-027-011 **Case Western Reserve University** **3071**
Summer program of NASA-ASEE summer faculty fellowships

Period	*Obligations*	
12/16/69-03/31/79	FY78: $131,300	TOTAL: $1,102,933
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bennett, W. R.	HQ-LU/Carter, C. H.	49-Engr, NEC

NSG 3009 **Case Western Reserve University** **3072**
An X-ray photoelectric spectroscopy study of nickel and nickel-base alloy surface alteration in simulated hot corrosion conditions

Period	*Obligations*	
06/01/74-02/15/78	FY78:	TOTAL: $58,900
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mateescu, G. D.	LERC/Kohl, F. J. LERC/Stearns, C. A.	12-Chemistry

NSG 3040 **Case Western Reserve University** **3073**
Heat transfer characteristics of porous materials

Period	*Obligations*	
10/01/74-10/31/78	FY78: $30,000	TOTAL: $110,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Dybbs, A.	LERC/Fortini, A.	47-Materials Engr

NSG 3058 **Case Western Reserve University** **3074**
Nacelle boattail flows

Period	*Obligations*	
03/01/75-05/31/78	FY78:	TOTAL: $60,406
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Reshotko, E.	LERC/Bober, L. J.	41-Aero Engr

NSG 3062 **Case Western Reserve University** **3075**
Interactive compressor flow-field calculations

Period	*Obligations*	
02/01/75-01/31/79	FY78:	TOTAL: $55,986
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Reshotko, E.	LERC/Sockol, P. M.	41-Aero Engr

NSG 3074 **Case Western Reserve University** **3076**
Applications of high power lasers

Period	*Obligations*	
05/29/75-08/14/78	FY78:	TOTAL: $149,655
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Angus, J. C. Edwards, R. V. Mann, J. A., Jr.	LERC/Dunning, J. W., Jr.	43-Chem Engr

NSG 3078 Case Western Reserve University 3077
Sampling designs for the surveillance of air pollution resources and intensity

Period	Obligations	
08/01/75-01/30/78	FY78:	TOTAL: $19,545
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Zacks, S. Kedem, B. Anbar, D.	LERC/Neustadter, H.E.	21-Mathematics

NSG 3085 Case Western Reserve University 3078
Demonstration experiment on utilization of buffer memory system for transmission of color video using moderate bandwidth communications satellite channels

Period	Obligations	
10/23/75-10/20/78	FY78: $97,815	TOTAL: $410,294
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Pao, Y. H.	LERC/Stevens, G. H.	45-Elec Engr

NSG 3115 Case Western Reserve University 3079
Computer graphic techniques for visualizing and interpreting fluid flow models

Period	Obligations	
06/30/76-06/29/79	FY78:	TOTAL: $48,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lynch, W. C. Parke, F. R.	LERC/Anderson, B. H.	41-Aero Engr

NSG 3126 Case Western Reserve University 3080
Effect of surface texture by ion beam sputtering on implant biocompatibility and soft tissue attachment

Period	Obligations	
10/01/76-02/14/79	FY78: $20,687	TOTAL: $40,577
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gibbons, D. F.	LERC/Weigand, A. J. LERC/Banks, B. A.	49-Engr, NEC

NSG 3131 Case Western Reserve University 3081
Adaptation of ion beam technology to microfabrication of solid state devices and transducers

Period	Obligations	
11/01/76-10/31/78	FY78: $25,146	TOTAL: $65,146
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Topich, J. A. Ko, W. H.	LERC/Mirtich, M. J. LERC/Banks, B. A.	19-Phys Sci, NEC

NSG 3140 Case Western Reserve University 3082
Spectroscopic investigation of the effects of moisture on epoxy resins

Period	Obligations	
02/01/77-01/31/80	FY78:	TOTAL: $58,680
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Koenig, J. L.	LERC/Serafini, T. T. LERC/Lauver, R. W.	12-Chemistry

NSG 3142 Case Western Reserve University 3083
Characterization of structure of a polymer with a magnetic resonance spectroscopy

Period	Obligations	
03/01/77-10/01/78	FY78: $4,000	TOTAL: $38,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ritchey, W. M.	LERC/Lauver, R. W.	12-Chemistry

NSG 3151 Case Western Reserve University 3084
The evaluation of surface texturing, by ion beam sputtering, on the mechanical fixation and biological compatibility of orthopedic alloys in bone

Period	Obligations	
05/01/77-10/31/78	FY78:	TOTAL: $13,522
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gibbons, D. F. Heiple, K. G. Makley, J. T.	LERC/Weigand, A. J. LERC/Banks, B. A.	53-Other Medical

NSG 3197 Case Western Reserve University 3085
Secondary electron emission yield

Period	Obligations	
07/01/78-06/30/79	FY78: $48,334	TOTAL: $48,334
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gordan, W. L. Hoffman, R. W.	LERC/Purvis, C. K. LERC/Stevens, N. J.	13-Physics

NSG 3203 Case Western Reserve University 3086
The development of sensors and techniques for in-situ water quality monitoring

Period	Obligations	
07/01/78-06/30/79	FY78: $29,996	TOTAL: $29,996
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Liu, C. C.	LERC/Fordyce, J. S.	43-Chem Engr

NSG 3206 Case Western Reserve University 3087
Experiments on jet mixing in compact reverse flow combustor configurations

Period	Obligations	
07/01/78-06/30/81	FY78: $67,850	TOTAL: $67,850
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Greber, I.	LERC/Riddlebaugh, S.M.	41-Aero Engr

NSG 3207 Case Western Reserve University 3088
Shaded computer graphic techniques for visualizing and interpreting analytic fluid flow models

Period	Obligations	
07/01/78-07/01/81	FY78: $53,000	TOTAL: $53,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Parke, F. I.	LERC/Anderson, B. H.	41-Aero Engr

NSG 3211 Case Western Reserve University 3089
Experimental investigation of shock-wave-boundary layer interaction

Period	Obligations	
06/01/78-05/30/81	FY78: $58,690	TOTAL: $58,690
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Greber, I.	LERC/Hingst, W. R.	41-Aero Engr

NSG 3221 **Case Western Reserve University** 3090
Convection in crystal growth and g-jitter
Period *Obligations*
09/01/78-08/31/79 FY78: $55,000 TOTAL: $55,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Ostrach, S. LERC/Labus, T. L. 13-Physics
LERC/Cochran, T. H.

NSG 5136 **Case Western Reserve University** 3091
Comparative qualitative study of high-resolution ultraviolet spectral scans of early-type stars
Period *Obligations*
11/15/76-02/14/78 FY78: TOTAL: $6,314
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bidelman, W. P. GSFC/Kupperian, J. E., Jr. 11-Astronomy

NSG 7035 **Case Western Reserve University** 3092
Development of a generalized technology for life prediction in the high-temperature creep and fatigue range
Period *Obligations*
05/01/74-04/30/79 FY78: $35,889 TOTAL: $178,276
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Manson, S. S. LERC/Hirschberg, M. H. 47-Materials Engr
LERC/Halford, G.R.

NGR 36-033-003 **Central State University - Ohio** 3093
Effects of some selected atmospheric pollutants on animal population surrounding the Cleveland area
Period *Obligations*
04/25/73-04/31/79 FY78: TOTAL: $136,807
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Craft, T. J., Sr. LERC/Fordyce, J. S. 51-Biology
Johnson, M. A., Jr. LERC/King, R. B.

NAS 3-18547 **Cleveland State University** 3094
Synthesis and optimization of spur gear tooth profile shapes for high load capacity
Period *Obligations*
06/04/74-12/24/79 FY78: $10,000 TOTAL: $69,980
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Kasuba, R. LERC/Townsend, D. P. 46-Mech Engr

NGT 36-025-780 **Cleveland State University** 3095
Precooperative engineering education program
Period *Obligations*
10/01/77-09/30/79 FY78: $4,257 TOTAL: $4,257
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Bennett, W. R. HQ-LU/Pohly, J. G. 49-Engr, NEC
LERC/Allen, R. P.

NSG 1445 **Cleveland State University** 3096
Boundedness of solutions and controllability of systems and pursuit games described by nonlinear neutral functional differential equations
Period *Obligations*
08/16/77-12/31/79 FY78: TOTAL: $17,768
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Chukwu, E. N. LARC/Dunning, R. S. 41-Aero Engr
LARC/Elliott, J. R.

NSG 3144 **Cleveland State University** 3097
International Conference on High Pressure and Low Temperature Physics
Period *Obligations*
03/01/77-03/31/78 FY78: TOTAL: $3,130
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Chu, C. W. LERC/Brown, G. V. 13-Physics
LERC/Woollam, J. A.

NSG 3155 **Cleveland State University** 3098
Dense silicon-nitride bodies without additives
Period *Obligations*
06/30/77-06/30/79 FY78: TOTAL: $44,850
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Yeh, H. C. LERC/Ashbrook, R. L. 47-Materials Engr

NSG 3222 **Cleveland State University** 3099
Investigation of power and energy measuring devices for monitoring non-sinusoidal ac and pulsed dc signals
Period *Obligations*
10/01/78-10/01/79 FY78: $32,986 TOTAL: $32,986
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Maisel, J. F. LERC/Nieberding, W. C. 45-Elec Engr
LERC/Weikle, D. H.

NSG 3223 **Cleveland State University** 3100
Control of a hybrid system with flywheel energy storage and continuously variable transmission
Period *Obligations*
10/01/78-03/31/80 FY78: $56,819 TOTAL: $56,819
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Burghart, J. H. LERC/Beach, R. F. 49-Engr, NEC
Donoghue, J. F.

NSG 2013 **Kent State University** 3101
Transport of trace contaminants through porous media
Period *Obligations*
03/15/74-12/15/79 FY78: $25,000 TOTAL: $98,700
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Madey, R. ARC/Quattrone, P. D. 12-Chemistry

NSG 3159 **Kent State University** **3102**
Evaluation of surface alignment mechanisms for nematic liquid crystals

Period	*Obligations*	
08/01/77-11/01/78	FY78:	TOTAL: $10,157
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Johnson, D. L.	LERC/Wintucky, E. G.	
	LERC/Banks, B. A.	47-Materials Engr

NAS 9-14538 **Miami University** **3103**
Research on a possible mechanism of 0-g sickness

Period	*Obligations*	
02/15/75-03/31/79	FY78: $23,384	TOTAL: $102,071
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Parker, D. E.	JSC/Homick, J. L.	59-Life Sci, NEC
	JSC/Reschke, M. F.	

NSG 1383 **Miami University** **3104**
High pressure laser plasma studies

Period	*Obligations*	
03/01/77-02/28/79	FY78: $24,553	TOTAL: $45,757
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wells, W. E.	LARC/Hohl, F.	13-Physics

NSG 1396 **Miami University** **3105**
Nuclear pumped lasers

Period	*Obligations*	
03/01/77-08/31/79	FY78: $41,908	TOTAL: $72,997
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wells, W. E.	LARC/Hohl, F.	13-Physics

NAS 1-14406 **Ohio State University** **3106**
General aviation low-speed airfoil design and development service

Period	*Obligations*	
06/30/76-06/29/79	FY78: $98,108	TOTAL: $298,108
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gregorek, G. M.	LARC/Barnwell, R. W.	41-Aero Engr
Burggraf, O. R.	LARC/Pierpont, P. K.	

NAS 2-9714 **Ohio State University** **3107**
Wind tunnel research on low drag airfoils for short haul aircraft

Period	*Obligations*	
08/01/77-08/31/78	FY78:	TOTAL: $68,975
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gregorek, G. M.	ARC/Galloway, T. L.	41-Aero Engr
Lee, J. D.	ARC/Williams, L. J.	

NAS 5-22575 **Ohio State University** **3108**
Communications link characterization experiment

Period	*Obligations*	
09/02/75-02/01/79	FY78: $91,943	TOTAL: $288,943
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hodge, D. B.	GSFC/Hirschmann, E.	45-Elec Engr

NAS 6-2484 **Ohio State University** **3109**
Investigation to improve existing gravity models, using GEOS altimeter data

Period	*Obligations*	
04/15/74-10/31/77	FY78:	TOTAL: $104,592
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rapp, R. H.	WFC/Stanley, H. R.	32-Geological Sci
	WFC/Rossi, L. C.	

NASW 3149 **Ohio State University** **3110**
Terrestrial Climatic Relationship symposium

Period	*Obligations*	
05/15/78-11/14/79	FY78: $24,946	TOTAL: $24,946
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Seliga, T. A.	HQ-ST/Simon, N. K.	31-Atmos Sci

NASW 3194 **Ohio State University** **3111**
Support of ninth geodesy solid earth and ocean physics

Period	*Obligations*	
01/01/78-06/30/79	FY78: $16,000	TOTAL: $16,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mueller, I. I.	HQ-ER/Murphy, J. P.	31-Atmos Sci

NCA 2-565801 **Ohio State University** **3112**
Application of coarse mesh rebalancing methods to aerodynamic equations

Period	*Obligations*	
11/01/77-12/31/78	FY78: $15,000	TOTAL: $15,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Nakamura, S.	ARC/Steger, J. L.	46-Mech Engr

NGL 36-008-051 **Ohio State University** **3113**
Stress corrosion cracking of titanium alloys

Period	*Obligations*	
06/23/66-06/01/79	FY78:	TOTAL: $208,696
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Beck, F. H.	LERC/Gray, H. R.	47-Materials Engr

NGR 36-008-161 **Ohio State University** **3114**
The direct combination of satellite and gravity data

Period	*Obligations*	
05/01/71-12/31/78	FY78: $19,215	TOTAL: $221,051
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rapp, R. H.	GSFC/Marsh, J. G.	32-Geological Sci

NGR 36-008-204 **Ohio State University** **3115**
Activity related to earth and ocean physics application program

Period	*Obligations*	
10/01/73-09/30/78	FY78:	TOTAL: $244,112
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mueller, I. I.	HQ-ER/Murphy, J. P.	32-Geological Sci
Uotila, U. A.		

NGT 36-008-007 **Ohio State University** 3116
Training of post graduate medical students in field of aerospace medicine

Period	*Obligations*	
04/02/64-08/31/78	FY78:	TOTAL: $687,463
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Keller, M. D.	HQ-LU/Nicogossian, A.	52-Clinical Med

NGT 36-008-780 **Ohio State University** 3117
Pre-cooperative engineering education program

Period	*Obligations*	
10/01/78-09/30/79	FY78: $2,030	TOTAL: $2,030
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Stranges, J.	HQ-LU/Pohly, J. G. LERC/Allen, R. P.	49-Engr, NEC

NSG 1498 **Ohio State University** 3118
Analysis of airborne antenna patterns

Period	*Obligations*	
01/16/78-01/15/79	FY78: $34,601	TOTAL: $34,601
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Burnside, W. D.	LARC/Gilreath, M. C. LARC/Croswell, W. F.	45-Elec Engr

NSG 2162 **Ohio State University** 3119
Electronic search technology applicable to the search for extraterrestrial intelligence problem

Period	*Obligations*	
06/01/76-07/31/79	FY78: $10,000	TOTAL: $25,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kraus, J. D. Dixon, R. S.	ARC/Billingham, J. ARC/Stull, M. A.	45-Elec Engr

NSG 2175 **Ohio State University** 3120
Laboratory infrared research relevant to atmospheric and planetary studies

Period	*Obligations*	
10/01/76-03/31/79	FY78: $55,000	TOTAL: $108,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rao, K. N.	ARC/Boese, R. W.	13-Physics

NSG 2179 **Ohio State University** 3121
Study of tactual sensing and transmittal of information

Period	*Obligations*	
09/01/76-12/31/78	FY78: $58,520	TOTAL: $110,497
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gilson, R. D.	ARC/Dunn, R. S.	69-Psych, NEC

NSG 2220 **Ohio State University** 3122
Environmental and genetic effects on gravity receptors: A morphological, physiological and behavioral study

Period	*Obligations*	
05/01/77-04/30/79	FY78: $40,849	TOTAL: $78,849
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lim, D. J.	ARC/Mehler, W. R.	51-Biology

NSG 2296 **Ohio State University** 3123
Subsonic wing aerodynamics study

Period	*Obligations*	
12/01/77-11/30/78	FY78: $32,576	TOTAL: $32,576
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gregorek, G. M. Weislogel, G. S.	ARC/Hicks, T. M.	41-Aero Engr

NSG 2298 **Ohio State University** 3124
Experimental analyses of trailing edge flows

Period	*Obligations*	
02/01/78-01/31/79	FY78: $69,767	TOTAL: $69,767
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Korkan, K. D. Petrie, S. L.	ARC/McDevitt, J. B. ARC/Lockman, W. K.	41-Aero Engr

NSG 3164 **Ohio State University** 3125
Deformation structures in metal crystals due to wear and machining at high speed

Period	*Obligations*	
12/01/77-03/01/79	FY78: $23,865	TOTAL: $23,865
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Black, J. T.	LERC/Bill, R. C. LERC/Ludwig, L. P.	47-Materials Engr

NSG 5140 **Ohio State University** 3126
Relative rotational broadening of far ultraviolet spectral lines

Period	*Obligations*	
12/01/76-05/31/78	FY78:	TOTAL: $2,839
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Collins, G. W., II	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5141 **Ohio State University** 3127
A search for variations in the spectrum of gamma gas

Period	*Obligations*	
12/01/76-05/31/78	FY78:	TOTAL: $374
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Slettebak, A. E.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5247 **Ohio State University** 3128
Exploratory observations of the ultraviolet spectra of late-type stars

Period	*Obligations*	
03/01/78-06/30/79	FY78: $9,187	TOTAL: $9,187
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wing, R. F.	GSFC/Boggess, A. GSFC/West, D. K.	11-Astronomy

NSG 5265 **Ohio State University** 3129
Basic research for the earth dynamics program

Period	*Obligations*	
04/01/78-03/31/79	FY78: $65,000	TOTAL: $65,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mueller, I. I.	GSFC/Smith, D. E.	32-Geological Sci

NSG 5275 **Ohio State University** **3130**
Research of altimeter data in order to improve existing gravity models

Period	*Obligations*	
05/15/78-02/14/79	FY78: $30,000	TOTAL: $30,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Schmidt, E. G.	GSFC/Kupperian, J. E., Jr.	32-Geological Sci

NSG 5299 **Ohio State University** **3131**
A search for variations in the spectrum

Period	*Obligations*	
08/15/78-08/14/79	FY78: $1,735	TOTAL: $1,735
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Slettebak, A. E.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NGR 36-009-017 **Ohio University** **3132**
Air transportation systems: Emphasis on low frequency navigation

Period	*Obligations*	
02/26/71-11/30/80	FY78: $75,000	TOTAL: $525,458
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McFarland, R. H.	LARC/Reid, H. J., Jr. LARC/MacE, W. D.	45-Elec Engr

NSG 7352 **Ohio University** **3133**
Study of mechanism of thigmomorphogenesis in plants with special reference to role of ethylene and its significance to research with plants in space

Period	*Obligations*	
06/05/77-06/14/79	FY78: $30,000	TOTAL: $60,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Jaffe, M. J.	HQ-SB/Halstead, T. W. HQ-SB/Geib, D. S.	51-Biology

NGT 36-001-780 **University of Akron** **3134**
Pre-cooperative engineering education program

Period	*Obligations*	
10/01/77-09/30/78	FY78: $2,616	TOTAL: $2,616
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Velez, V.	HQ-LU/Pohly, J. G. LERC/Allen, R. P.	49-Engr, NEC

NCA 2-130801 **University of Cincinnati** **3135**
Design and analysis of closed loop guidance laws for VTOL and STOL vehicles

Period	*Obligations*	
08/15/78-08/15/79	FY78: $14,412	TOTAL: $14,412
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Slater, G. L.	ARC/Erzberger, H. ARC/Xenakis, G.	41-Aero Engr

NGT 36-004-780 **University of Cincinnati** **3136**
Pre-cooperative engineering education program

Period	*Obligations*	
10/01/77-09/30/78	FY78: $2,190	TOTAL: $2,190
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Brown, J.	HQ-LU/Pohly, J. G. LERC/Allen, R. P.	49-Engr, NEC

NSG 1185 **University of Cincinnati** **3137**
Thermal analysis of composite panels three dimensional reinforced composites

Period	*Obligations*	
05/01/75-09/30/78	FY78: $14,236	TOTAL: $71,420
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Nayfeh, A. H.	LARC/Card, M. F. LARC/Mikulas, M. M., Jr.	49-Engr, NEC

NSG 1486 **University of Cincinnati** **3138**
Investigation of improved modal parameter estimation techniques

Period	*Obligations*	
01/16/78-01/15/79	FY78: $33,512	TOTAL: $33,512
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Brown, D. L.	LARC/Monteith, J. H.	46-Mech Engr

NSG 3022 **University of Cincinnati** **3139**
Investigation of a new family of semiconductor diodes based upon bulk effects of deep impurities

Period	*Obligations*	
07/01/74-10/01/80	FY78: $56,441	TOTAL: $141,107
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Henderson, H. T.	LERC/Sundberg, G. R.	45-Elec Engr

NSG 3024 **University of Cincinnati** **3140**
Research into the use of silane pyrolytic deposition methods for SiO2 growth in the construction of stable high energy density capacitors

Period	*Obligations*	
07/01/74-10/01/80	FY78: $40,085	TOTAL: $95,118
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Nevin, J. H.	LERC/Riley, T. J. LERC/Myers, I. T.	45-Elec Engr

NSG 3045 **University of Cincinnati** **3141**
A study of parameters affecting emmissions from turbine engines

Period	*Obligations*	
04/02/75-12/31/77	FY78:	TOTAL: $63,546
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kauffman, C. W.	LERC/Jones, R. E.	41-Aero Engr

NSG 3066 **University of Cincinnati** **3142**
Study of the fluid mechanics of a radial turbine scroll

Period	*Obligations*	
07/01/75-06/30/79	FY78:	TOTAL: $46,213
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Tabakoff, W.	LERC/Stepka, F. S.	41-Aero Engr

NSG 3091 **University of Cincinnati** **3143**
Study of suitable isomers for gamma ray lasers
Period *Obligations*
12/15/75-01/15/79 FY78: TOTAL: $34,268
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Jha, S. LERC/Blue, J. W. 13-Physics
LERC/Leonard, R. F.

NSG 3147 **University of Cincinnati** **3144**
High-temperature low-cycle fatigue and crack propagation
Period *Obligations*
06/01/77-06/01/79 FY78: $26,500 TOTAL: $52,130
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Antolovich, S. D. LERC/Miner, R. V., Jr. 47-Materials Engr

NSG 3188 **University of Cincinnati** **3145**
Investigations into the geometry of straight and spiral bevel gears
Period *Obligations*
04/01/78-03/31/80 FY78: $25,000 TOTAL: $25,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Huston, R. L. LERC/Coy, J. J. 46-Mech Engr

NAS 3-19699 **University of Dayton** **3146**
ATS user experiments history
Period *Obligations*
05/15/75-05/14/77 FY78: TOTAL: $48,506
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Engler, N. A. LERC/Hein, G. F. 73-History

NAS 3-20365 **University of Dayton** **3147**
Space broadcast communications technology value assessment methodology study
Period *Obligations*
06/24/76-03/31/77 FY78: TOTAL: $95,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Martino, J. P. LERC/Stevenson, S. M.
LERC/Sivo, J. N. 39-Env Sci, NEC

NAS 3-20392 **University of Dayton** **3148**
Continuation of the study for development of ATS and communications technology satellite user experiments history
Period *Obligations*
02/04/77-01/04/78 FY78: TOTAL: $49,904
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Engler, N. A. LERC/Entile, L. G. 42-Astro Engr
Scheffler, F. L.

NAS 3-21355 **University of Dayton** **3149**
Cross impact assessment of fibre optic technology development
Period *Obligations*
03/21/78-11/03/78 FY78: $16,776 TOTAL: $16,776
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Martino, J. P. LERC/Stevenson, S. M.
Lenz, R. C., Jr. LERC/Merutka, J. P. 47-Materials Engr
Chen, K. L.

NAS 3-21370 **University of Dayton** **3150**
Compilation of ATS-1, 3, 5, 6 and CTS user experiments documentation
Period *Obligations*
06/08/78-05/08/79 FY78: $58,567 TOTAL: $58,567
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Engler, N. A. LERC/Gentile, L. C. 42-Astro Engr
Nash, J.

NAS 3-21698 **University of Dayton** **3151**
Meeting for AGARD/NATO representatives
Period *Obligations*
08/31/78-11/10/78 FY78: $6,000 TOTAL: $6,000
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Militello, J. LERC/Acurio, J. 41-Aero Engr

NAS 6-2456 **University of Dayton** **3152**
Atmospheric phenomenae associated with falling spheres
Period *Obligations*
03/25/74-02/28/79 FY78: $62,042 TOTAL: $198,685
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Luers, J. K. WFC/Duke, J. R. 31-Atmos Sci
WFC/Schmidlin, F. J.

NAS 8-31294 **University of Dayton** **3153**
Examination of requirements and methods for reporting atmospheric information
Period *Obligations*
01/16/75-01/31/79 FY78: $45,241 TOTAL: $158,024
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Luers, J. K. MSFC/Camp, D. W. 41-Aero Engr
Engler, N. A. MSFC/Alexander, M.

NAS 8-32111 **University of Dayton** **3154**
Turbulence study
Period *Obligations*
07/21/76-06/01/79 FY78: $40,073 TOTAL: $104,619
Prin. Invest. *NASA Tech. Officer* *CASE Category*
Luers, J. K. MSFC/Camp, D. W. 41-Aero Engr
MSFC/Alexander, M. B.

NSG 7444 University of Dayton 3155
An investigation of the cratering-induced motions occuring during the formation of bowl-shaped craters
Period: 06/01/78-05/31/79 Obligations: FY78: $48,704 TOTAL: $48,704
Prin. Invest.: Piekutowski, A. J. NASA Tech. Officer: HQ-SL/Quaide, W. L.; HQ-SL/French, B. E. CASE Category: 32-Geological Sci

NSG 3084 University of Toledo 3156
Multi-variable control and sensor evaluation for integrated air breathing propulsion systems
Period: 01/01/76-12/31/79 Obligations: FY78: TOTAL: $52,790
Prin. Invest.: Leininger, G. G. NASA Tech. Officer: LERC/Lehtinen, B. CASE Category: 45-Elec Engr

NSG 3099 University of Toledo 3157
Energy transfer mechanism in a laser-sustained flowing-gas plasma
Period: 03/15/76-08/14/79 Obligations: FY78: TOTAL: $18,604
Prin. Invest.: Rush, W. F. NASA Tech. Officer: LERC/Connolley, D. J. CASE Category: 13-Physics

NSG 3121 University of Toledo 3158
Mass transport phenomena between bubbles and dissolved gases in liquids in a zero-g environment
Period: 09/01/76-09/01/79 Obligations: FY78: $4,000 TOTAL: $6,001
Prin. Invest.: DeWitt, K. J. NASA Tech. Officer: LERC/Labus, T. L. CASE Category: 49-Engr, NEC

NSG 3139 University of Toledo 3159
Stability analysis of wind turbines with long, flexible blades
Period: 02/22/77-02/21/79 Obligations: FY78: $47,092 TOTAL: $89,996
Prin. Invest.: Koza, K. R. NASA Tech. Officer: LERC/Spera, D. A.; LERC/Thomas, R. L. CASE Category: 41-Aero Engr

NSG 3156 University of Toledo 3160
Analysis of the stirling engine oil pumping ring seal
Period: 07/01/77-09/31/78 Obligations: FY78: $14,490 TOTAL: $36,384
Prin. Invest.: Keith, T. G.; Smith, P. J. NASA Tech. Officer: LERC/Cunningham, R. E.; LERC/Ludwig, L. P. CASE Category: 46-Mech Engr

NSG 3171 University of Toledo 3161
Properties of the multivariable Nyquist array method
Period: 11/01/77-10/31/79 Obligations: FY78: $30,000 TOTAL: $30,000
Prin. Invest.: Leininger, G. G. NASA Tech. Officer: LERC/Lehtinen, B. CASE Category: 45-Elec Engr

NSG 5183 University of Toledo 3162
Research of the temporal line-blanketing effects for photometric variations
Period: 07/01/77-06/30/78 Obligations: FY78: TOTAL: $4,899
Prin. Invest.: Molnar, M. R. NASA Tech. Officer: GSFC/Kupperian, J. E., Jr. CASE Category: 11-Astronomy

NSG 5207 University of Toledo 3163
Coordinated copernicus and ground based observations of the radio binaries
Period: 09/01/77-03/31/79 Obligations: FY78: TOTAL: $2,818
Prin. Invest.: Bopp, B. W. NASA Tech. Officer: GSFC/Kupperian, J. E., Jr. CASE Category: 11-Astronomy

NSG 7041 University of Toledo 3164
Measurement of the ultraviolet surface brightness of reflection nebulae with the Dutch national satellite
Period: 12/15/74-03/15/78 Obligations: FY78: $284 TOTAL: $29,396
Prin. Invest.: Witt, A. N. NASA Tech. Officer: HQ-SC/Rosendhal, J. D.; HQ-SC/Roman, N. G. CASE Category: 11-Astronomy

NSG 7138 University of Toledo 3165
Satellite ultraviolet data analysis program
Period: 05/01/75-04/30/78 Obligations: FY78: TOTAL: $31,030
Prin. Invest.: Molnar, M. R. NASA Tech. Officer: HQ-SC/Roman, N. G.; HQ-SC/Rosendhal, J. D. CASE Category: 11-Astronomy

NSG 7301 University of Toledo 3166
Physical study of comets
Period: 01/01/77-12/31/77 Obligations: FY78: TOTAL: $19,928
Prin. Invest.: Delsemme, A. H. NASA Tech. Officer: HQ-SL/Donn, B. D.; HQ-SL/Fellows, R. F. CASE Category: 11-Astronomy

NSG 7424 University of Toledo 3167
Conference April 1978 'Cella Molecular Biology in Space'
Period: 03/15/78-03/15/79 Obligations: FY78: $19,511 TOTAL: $19,511
Prin. Invest.: Diehn, B.; Deamer, D. NASA Tech. Officer: HQ-SB/Geib, D. S.; HQ-SB/Young, R. S. CASE Category: 51-Biology

NSG 7431 University of Toledo 3168
Ultraviolet studies of reflection nebulae
Period: 03/01/78-06/30/79 Obligations: FY78: $24,000 TOTAL: $24,000
Prin. Invest.: Witt, A. N. NASA Tech. Officer: HQ-SC/Rosendhal, J. D.; HQ-SC/Roman, N. G. CASE Category: 11-Astronomy

OHIO (Continued)

NSG 7475 **University of Toledo** **3169**
Copernicus and buss observations of AP stars

Period | *Obligations*
07/01/78-06/30/79 | FY78: $11,628 | TOTAL: $11,628

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Molnar, M. R. | HQ-SC/Roman, N. G. | 11-Astronomy
HQ-SC/Rosendhal, J. D.

NSG 3067 **Wilberforce University** **3170**
Synthesis of specialized organic compounds

Period | *Obligations*
05/01/75-12/31/77 | FY78: | TOTAL: $41,000

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Stickney, P. B. | LERC/Hsu, L. C. | 12-Chemistry
LERC/Sheibley, D. W.

NCA 2-875801 **Wright State University** **3171**
Motion sickness in the Cat: An evaluation of vestibular habituation rates and the incidence of sickness

Period | *Obligations*
01/01/78-12/31/79 | FY78: $18,148 | TOTAL: $18,148

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Crampton, G. H. | ARC/Daunton, N. G. | 59-Life Sci, NEC

NSG 1417 **Wright State University** **3172**
Computation of unsteady stability derivatives from a simplified aerodynamic force model

Period | *Obligations*
09/01/77-12/31/78 | FY78: $2,970 | TOTAL: $32,874

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Wells, W. R. | LARC/Queijo, M. J. | 41-Aero Engr
LARC/Suit, W. T.

NSG 2034 **Wright State University** **3173**
Medical applications of space-related research

Period | *Obligations*
07/01/74-12/01/78 | FY78: | TOTAL: $49,896

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Beljan, J. R. | ARC/Young, D. R. | 53-Other Medical

OKLAHOMA

NAS 2-9877 **Oklahoma State University** **3174**
Development and execution of a visitor and tour program

Period | *Obligations*
11/01/77-10/31/78 | FY78: $142,636 | TOTAL: $142,636

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Wiggins, K. E. | ARC/Miller, S. A. | 99-Multi-Discip

NCA 2-575701 **Oklahoma State University** **3175**
Evaluation method for transonic cone boundary layer transition data by means of computer simulation

Period | *Obligations*
11/01/76-11/30/78 | FY78: $7,670 | TOTAL: $16,970

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Tiederman, W. G. | ARC/Steinle, F. W., Jr. | 41-Aero Engr

NSG 1467 **Oklahoma State University** **3176**
An experimental study of the noise generating mechanisms in supersonic jets

Period | *Obligations*
11/15/77-10/31/79 | FY78: $34,120 | TOTAL: $34,120

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
McLaughlin, D. K. | LARC/Seiner, J. M. | 41-Aero Engr
LARC/Maestrello, L.

NSG 6018 **Oklahoma State University** **3177**
Investigation for improved precision in aerial application equipment

Period | *Obligations*
10/01/77-09/30/78 | FY78: $60,390 | TOTAL: $60,390

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Roth, L. O. | WFC/Carr, R. E. | 49-Engr, NEC
Bowens, W.

NASW 2881 **Southeastern Oklahoma State College** **3178**
Operation of the technology use studies center

Period | *Obligations*
01/01/76-12/31/76 | FY78: | TOTAL: $72,997

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Gold, C. H. | HQ-ET/Bivins, R. G. | 99-Multi-Discip

NASW 3007 **Southeastern Oklahoma State College** **3179**
Operation of the technology use center

Period | *Obligations*
01/01/77-06/30/78 | FY78: $53,480 | TOTAL: $128,480

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Gold, C. H. | HQ-ET/Bivins, R. G. | 99-Multi-Discip

NSG 802 **Southeastern Oklahoma State College** **3180**
Analysis of thermophilic microorganisms & sterilization

Period | *Obligations*
05/23/74-03/30/79 | FY78: | TOTAL: $50,805

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Robinson, J. L. | KSC/Bostwick, L. G. | 51-Biology

NSG 2282 **University of Oklahoma - Health Center** **3181**
Central and peripheral mechanisms underlying cardiovascular deconditioning in the unanesthetized primate

Period | *Obligations*
11/01/77-10/31/79 | FY78: $45,235 | TOTAL: $45,235

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Stone, H. L. | ARC/Sandler, H. | 53-Other Medical

OKLAHOMA (Continued)

NSG 2312 **University of Oklahoma - Health Center** **3182**
Mechanisms of blood flow changes during gravitational stress

Period	*Obligations*	
04/01/78-01/31/79	FY78: $26,904	TOTAL: $26,904
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Stone, H. L.	ARC/Sandler, H.	59-Life Sci, NEC

NAS 8-31333 **University of Oklahoma - Norman** **3183**
Study of the nature of atmospheric variability represented by data obtained on AVE experiment

Period	*Obligations*	
02/27/75-01/31/77	FY78:	TOTAL: $41,995
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Inman, R. L.	MSFC/Turner, R. E. MSFC/Vaughn, W. W.	31-Atmos Sci

NAS 8-31377 **University of Oklahoma - Norman** **3184**
Integrating upper and lower atmospheric wind profiles and statistics

Period	*Obligations*	
03/17/75-02/20/79	FY78: $17,965	TOTAL: $82,929
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McCarthy, J. Blick, E. F.	MSFC/Camp, D. W.	31-Atmos Sci

NGT 37-003-760 **University of Oklahoma - Norman** **3185**
Training of undergraduate students in sciences and engineering

Period	*Obligations*	
06/01/76-05/31/79	FY78: $7,000	TOTAL: $31,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Thomas, G.	HQ-LU/Pohly, J. G. HQ-U/Jenkins, H. G.	49-Engr, NEC

NSG 1404 **University of Oklahoma - Norman** **3186**
Temperature dependence of silicon pressure sensors

Period	*Obligations*	
03/15/77-05/31/78	FY78:	TOTAL: $51,136
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kahng, S. K.	LARC/Bryant, F. R. LARC/Feller, C. F.	13-Physics

NSG 1481 **University of Oklahoma - Norman** **3187**
Miniature piezoresistive solid state integrated pressure sensor

Period	*Obligations*	
01/01/78-11/30/78	FY78: $36,651	TOTAL: $36,651
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kahng, S. K.	LARC/Gross, C. LARC/Ocheltree, S. L.	45-Elec Engr

NSG 5257 **University of Oklahoma - Norman** **3188**
Research of the ultraviolet spectrum of a massive triple system OAO

Period	*Obligations*	
03/15/78-03/14/79	FY78: $572	TOTAL: $572
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Herczeg, T. J.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

OREGON

NSG 3054 **Oregon Graduate Center** **3189**
Fabrication and surface characterization of composite refractory compounds suitable for thermionic converters

Period	*Obligations*	
12/01/74-04/30/78	FY78:	TOTAL: $159,320
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Swanson, L. S.	LERC/Morris, J. F.	47-Materials Engr

NSG 7457 **Oregon Graduate Center** **3190**
Spatial and temporal variations in atmospheric carbon concentration

Period	*Obligations*	
05/01/78-04/30/79	FY78: $74,100	TOTAL: $74,100
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rasmussen, R. A.	HQ-ST/Newton, G. P.	31-Atmos Sci

NAS 5-23738 **Oregon State University** **3191**
Ocean color ground truth support

Period	*Obligations*	
10/21/76-03/01/79	FY78: $35,000	TOTAL: $101,558
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Zaneveld, R. V. Pak, H.	GSFC/Mueller, J.	39-Env Sci, NEC

NAS 8-32694 **Oregon State University** **3192**
Frontogenesis study

Period	*Obligations*	
07/01/78-06/30/79	FY78: $12,500	TOTAL: $12,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Barber, D. A.	MSFC/Hill, K. MSFC/Thomas, P. E.	31-Atmos Sci

NAS 9-14860 **Oregon State University** **3193**
Assessment of the impact of increased solar ultraviolet radiation upon marine ecosystems

Period	*Obligations*	
10/08/75-11/30/78	FY78: $65,000	TOTAL: $200,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
VanDyke, H.	JSC/Nachtwey, D. S.	51-Biology

NAS 9-15547 **Oregon State University** **3194**
Food and fibre information evaluation study

Period	*Obligations*	
05/01/78-04/30/79	FY78: $24,350	TOTAL: $24,350
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Eisgruber, L.	JSC/Peterson, J.	53-Other Medical

NGL 38-002-020 **Oregon State University** **3195**
Study of elemental abundances in meteorite and terrestrial matter

Period | *Obligations*
08/26/66-02/28/78 | FY78: | TOTAL: $413,622

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Schmitt, R. A. | HQ-SL/Bryson, R. P. | 32-Geological Sci
HQ-SL/Roberson, F. I.

NGL 38-002-039 **Oregon State University** **3196**
Lunar sample analysis

Period | *Obligations*
01/19/71-01/31/80 | FY78: $32,037 | TOTAL: $481,657

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Schmitt, R. A. | JSC/Harris, J. W. | 13-Physics

NGL 38-002-053 **Oregon State University** **3197**
Development and operation of an environmental remote sensing applications laboratory

Period | *Obligations*
03/16/72-03/31/81 | FY78: $125,000 | TOTAL: $850,000

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Schrumpf, B. J. | HQ-ET/Vitale, J. A. | 39-Env Sci, NEC

NSG 4013 **Oregon State University** **3198**
Problems associated with flight control in turbulence

Period | *Obligations*
09/01/77-09/30/78 | FY78: | TOTAL: $23,818

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Ruzicka, J. | DFRC/Iliff, K. W. | 41-Aero Engr

NSG 7178 **Oregon State University** **3199**
Examination of the suggested modes of origin of channels found on the Moon and Mars

Period | *Obligations*
01/01/76-01/31/79 | FY78: $24,990 | TOTAL: $60,650

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Komar, P. D. | HQ-SL/Dwornik, S.E. | 32-Geological Sci
HQ-SL/Boyce, J. M.

NCA 2-587801 **University of Oregon - Eugene** **3200**
A computer-based measure of vocal stress

Period | *Obligations*
07/01/78-06/30/79 | FY78: $14,985 | TOTAL: $14,985

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Brenner, M. | ARC/Dunn, R. S. | 69-Psych, NEC
Branscomb, H.

NGL 38-003-022 **University of Oregon - Eugene** **3201**
Lunar sample analysis

Period | *Obligations*
02/09/71-01/31/81 | FY78: $80,968 | TOTAL: $581,772

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Weill, D. F. | JSC/Harris, J. W. | 13-Physics

NGR 38-003-020 **University of Oregon - Eugene** **3202**
Inspection of petrologically significant physical and chemical properties of the silicate melts

Period | *Obligations*
06/01/70-02/28/81 | FY78: $122,496 | TOTAL: $778,167

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Weill, D. F. | HQ-SL/Quaide, W. L. | 32-Geological Sci
HQ-SL/French, B. E.

NGR 38-003-036 **University of Oregon - Eugene** **3203**
Transition probability in multiply ionized atoms

Period | *Obligations*
07/03/72-09/01/79 | FY78: $68,000 | TOTAL: $205,500

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Crasemann, B. | ARC/Whiting, E. E. | 13-Physics

NSG 7360 **University of Oregon - Eugene** **3204**
Far-infrared measurements of trace constituents

Period | *Obligations*
06/01/77-09/30/78 | FY78: | TOTAL: $43,880

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Nolt, I. G. | HQ-ST/Tilford, S. G. | 31-Atmos Sci
Radostitz, J. V. | HQ-ST/Simon, N. K.

NAS 8-32162 **University of Oregon-Health Sci. Ctr.** **3205**
Analytical study of electrophoretic characterization of kidney cells

Period | *Obligations*
08/06/76-06/05/78 | FY78: | TOTAL: $53,741

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Knox, R. J. | MSFC/Scott, F. E. | 59-Life Sci, NEC
MSFC/Miller, T. Y.

NAS 8-32353 **University of Oregon-Health Sci. Ctr.** **3206**
SPAR project: Counter current distribution of biologicals

Period | *Obligations*
12/01/76-12/31/77 | FY78: | TOTAL: $57,665

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Brooks, D. E. | MSFC/Reeves, F. A. | 51-Biology
MSFC/Chassay, R. P.

NAS 8-32609 **University of Oregon-Health Sci. Ctr.** **3207**
Electrophoretic separator experiments

Period | *Obligations*
08/08/77-04/30/79 | FY78: $49,899 | TOTAL: $64,899

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Seaman, G. V. | MSFC/Reeves, F. A. | 51-Biology
MSFC/Snyder, R. S.

NAS 8-32817 **University of Oregon-Health Sci. Ctr.** **3208**
Counter current distribution of biologic cells

Period | *Obligations*
03/07/78-03/06/79 | FY78: $49,996 | TOTAL: $49,996

Prin. Invest. | *NASA Tech. Officer* | *CASE Category*
Brooks, D. E. | MSFC/Nerrin, B. N. | 51-Biology

PENNSYLVANIA

NSG 3136 **Bucknell University** **3209**
Development of a predictive model for thermal and thermo-oxidatives stability of PMR polymide graphite fiber composites

Period	Obligations	
02/01/77-01/31/79	FY78: $14,992	TOTAL: $29,024
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Snyder, W. J.	LERC/Gluyas, R. E. LERC/Serafini, T. T.	43-Chem Engr

NAS 3-20370 **Carnegie - Mellon University** **3210**
Evaluation of the mechanical properties of electroslag refined Fe-12 Ni alloys

Period	Obligations	
09/02/76-08/01/78	FY78:	TOTAL: $36,977
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bhat, G. K.	LERC/Witzke, W. R.	47-Materials Engr

NGR 39-087-021 **Carnegie - Mellon University** **3211**
Studies of heterodyne solar cell performance

Period	Obligations	
03/26/70-04/30/79	FY78: $30,404	TOTAL: $316,423
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Milnes, A. G.	LARC/Walker, G. H. LARC/Conway, E. J.	13-Physics

NGR 39-087-053 **Carnegie - Mellon University** **3212**
Special finite elements for cracks in elasto-plastic media

Period	Obligations	
09/01/73-10/07/77	FY78:	TOTAL: $143,436
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Swedlow, J. L.	LERC/Srawley, J. E. LERC/Gross, B.	46-Mech Engr

NSG 3172 **Carnegie - Mellon University** **3213**
Evaluation of failure mechanics in composites

Period	Obligations	
12/01/77-12/01/78	FY78: $30,000	TOTAL: $30,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Swedlow, J. L.	LERC/Srawley, J. E. LERC/Brown, W. F., Jr.	46-Mech Engr

NSG 3202 **Carnegie - Mellon University** **3214**
A preliminary thermal analysis of reciprocating seals for the stirling engine

Period	Obligations	
07/01/78-11/30/78	FY78: $6,715	TOTAL: $6,715
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hughes, W. F.	LERC/Cunningham, R.E. LERC/Ludwig, L. P.	46-Mech Engr

NAS 1-14393 **Drexel University** **3215**
Science support for the limb infrared monitor of the stratosphere experiment

Period	Obligations	
04/01/76-10/31/78	FY78: $16,000	TOTAL: $53,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
House, F. B.	LARC/Russell, J. M., III LARC/James, R. L., Jr.	31-Atmos Sci

NAS 5-22946 **Drexel University** **3216**
Science support for the earth radiation budget experiment on Nimbus G

Period	Obligations	
01/12/76-10/01/80	FY78: $80,108	TOTAL: $120,108
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
House, F. B.	GSFC/Nelsen, E. D.	13-Physics

NSG 1496 **Drexel University** **3217**
Research on singular perturbation techniques for on-line optimal control

Period	Obligations	
02/01/78-12/31/78	FY78: $24,768	TOTAL: $24,768
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Calise, A. J.	LARC/Price, D. B. LARC/Dunning, R. S.	41-Aero Engr

NSG 1545 **Drexel University** **3218**
Development of a climate model using a time-dependent energy balance formulation

Period	Obligations	
07/01/78-06/30/79	FY78: $21,500	TOTAL: $21,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
House, F. B. Jafolla, J. C.	LARC/Smith, G. L. LARC/Suttles, J. T.	31-Atmos Sci

NSG 3090 **Drexel University** **3219**
Theory for nonlinear reaction-diffusion phenomena with application to free radical recombination

Period	Obligations	
10/01/75-09/31/78	FY78: $23,000	TOTAL: $78,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rosen, G. H.	LERC/Zeleznik, F. J.	21-Mathematics

NSG 3128 **Drexel University** **3220**
Interface characterization of metal matrix composites

Period	Obligations	
10/01/76-10/31/78	FY78: $35,000	TOTAL: $70,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lawley, A. Koczak, M. J.	LERC/Grimes, H. H. LERC/Lad, R. A.	47-Materials Engr

NSG 5162 **Drexel University** **3221**
Utilization of satellite data and regional scale numerical models in short range weather forecasting

Period	Obligations	
03/01/77-05/31/79	FY78: $69,900	TOTAL: $204,900
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kreitzberg, C.	GSFC/Ucellini, L. W.	31-Atmos Sci

NSG 6007 **Drexel University** **3222**
Electrochemical concentration cell ozonesonde performance tests

Period	*Obligations*	
05/01/76-11/30/78	FY78: $45,650	TOTAL: $103,250
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hackney, R. L.	WFC/Holland, A. C.	31-Atmos Sci
Hackney, K. R.		

NSG 6019 **Drexel University** **3223**
Theoretical investigations into the scattering of light by real aerosols

Period	*Obligations*	
11/01/77-10/31/78	FY78: $17,750	TOTAL: $17,750
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Acquista, C. R.	WFC/Holland, A. C.	13-Physics

NAS 9-15620 **Hahnemann Medical College & Hospital** **3224**
Parotid fluid analysis of blood anti-motion sickness drug levels

Period	*Obligations*	
07/05/78-08/31/79	FY78: $25,000	TOTAL: $25,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Digregorio, G. J.	JSC/Homick, J. L.	59-Life Sci, NEC

NAS 8-32406 **Lehigh University** **3225**
Development of a stable low-electroosmotic mobility coating for use in electrophoresis systems

Period	*Obligations*	
05/25/77-07/31/78	FY78:	TOTAL: $40,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
VanDerHoff, J. W.	MSFC/Kornfield, D. M.	51-Biology
Micale, F. J.	MSFC/Snyder, R. S.	

NAS 8-32657 **Lehigh University** **3226**
Evaluation of surface properties in space processing applications rocket electrophoresis

Period	*Obligations*	
08/18/77-08/17/78	FY78: $20,000	TOTAL: $30,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
VanDerHoff, J. W.	MSFC/Reeves, F. A.	59-Life Sci, NEC
Micale, F. J.	MSFC/Snyder, R. S.	
El-Asser, M. S.		

NAS 8-32951 **Lehigh University** **3227**
Experiment for materials processing in space production of large particle size monodisperse latexes

Period	*Obligations*	
02/22/78-02/22/83	FY78: $174,315	TOTAL: $174,315
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
VanDerHoff, J. W.	MSFC/Williams, J. R.	13-Physics
	MSFC/Kornfeld, D. M.	

NAS 9-15619 **Lehigh University** **3228**
Development of space bioprocessing system

Period	*Obligations*	
06/01/78-05/31/79	FY78: $60,000	TOTAL: $60,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Nyiri, L. K.	JSC/Morrison, D. R.	59-Life Sci, NEC
Charles, M.		

NCA 2-380801 **Lehigh University** **3229**
The infrared spectrum of gaseous N205

Period	*Obligations*	
10/01/77-12/31/78	FY78: $5,221	TOTAL: $5,221
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lovejoy, R. W.	ARC/Boese, R. W.	12-Chemistry
	ARC/Chackerian, C., Jr.	

NGL 39-007-007 **Lehigh University** **3230**
Investigation of solidification structure & eutectic alloys including consideration of properties control

Period	*Obligations*	
02/17/65-07/01/78	FY78:	TOTAL: $415,361
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kraft, R. W.	LERC/Ashbrook, R. L.	
Hertzberg, R. W.		47-Materials Engr
Notis, M. R.		

NGR 39-007-011 **Lehigh University** **3231**
Investigation of fatigue-crack propagation in thin plates and shells

Period	*Obligations*	
11/30/64-10/31/78	FY78: $14,355	TOTAL: $412,200
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Erdogan, F.	LARC/Everett, R. A., Jr.	
	LARC/Fichter, W. B.	21-Mathematics

NGR 39-007-043 **Lehigh University** **3232**
Shock and thermal history of unusual iron meteorites

Period	*Obligations*	
05/24/71-03/31/79	FY78: $43,000	TOTAL: $215,240
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Goldstein, J. I.	HQ-SL/French, B. M.	32-Geological Sci
Williams, D. B.	HQ-SL/Quaide, W. L.	

NGR 39-007-056 **Lehigh University** **3233**
Lunar sample analysis

Period	*Obligations*	
01/12/71-01/31/81	FY78: $72,346	TOTAL: $474,096
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Goldstein, J. I.	JSC/Harris, J. W.	12-Chemistry

NGR 39-007-061 **Lehigh University** **3234**
Investigation of generation of X-rays in close binary stars

Period	*Obligations*	
03/10/73-06/30/80	FY78: $19,000	TOTAL: $47,965
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McCluskey, G. E., Jr.	JSC/Potter, A. E.	11-Astronomy

NGR 39-007-064 **Lehigh University** **3235**
Lunar sample analysis

Period	*Obligations*	
06/07/71-03/31/79	FY78: $11,810	TOTAL: $325,915
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sclar, C. B.	JSC/Harris, J. W.	13-Physics

NSG 3162 **Lehigh University** **3236**
Blade flutter in compressors and fans: Numerical simulation of aerodynamic loading

Period	*Obligations*	
01/01/78-12/31/80	FY78:	TOTAL: $67,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rockwell, D. O.	LERC/Batterton, P. G.	41-Aero Engr
Johnson, S. H.	LERC/Kurkov, A. P.	

NSG 3179 **Lehigh University** **3237**
Time-dependent response of unidirectional and laminate composites under static and impact loading

Period	*Obligations*	
02/13/78-02/12/79	FY78: $52,315	TOTAL: $52,315
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sih, G. C.	LERC/Chamis, C. C.	49-Engr, NEC
Chen, E. P.	LERC/Smith, G. T.	

NSG 3193 **Lehigh University** **3238**
Application of fine mesh particles to metal and organic substrates for ion beam texturing applications

Period	*Obligations*	
04/10/78-04/09/79	FY78: $14,990	TOTAL: $14,990
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Micale, F. J.	LERC/Sovey, J. S.	47-Materials Engr

NAS 5-23800 **Lincoln University** **3239**
Medical information management system

Period	*Obligations*	
11/22/76-12/30/78	FY78:	TOTAL: $78,336
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Frankowsky, J. W.	GSFC/Alterescu, S.	53-Other Medical
	KSC/Buchanan, P.	

NGT 39-108-750 **Lincoln University** **3240**
Training of undergraduate students in sciences and engineering fields

Period	*Obligations*	
06/01/75-05/31/78	FY78:	TOTAL: $21,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Williams, W., Jr.	HQ-LU/Pohly, J. G.	49-Engr, NEC
	HQ-U/Jenkins, H. G.	

NAS 5-23859 **Pennsylvania State University** **3241**
U-2 and LANDSAT data processing and intralab analysis support

Period	*Obligations*	
01/21/77-11/15/78	FY78: $64,935	TOTAL: $134,243
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McMurtry, G. J.	GSFC/Alford, W. L.	39-Env Sci, NEC

NAS 5-24264 **Pennsylvania State University** **3242**
Application of satellite data to the study of urban heating patterns

Period	*Obligations*	
09/23/77-07/31/79	FY78:	TOTAL: $32,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Carlson, T. N.	GSFC/Oseroff, H.	31-Atmos Sci
	GSFC/Stuart, L. M.	

NAS 5-24329 **Pennsylvania State University** **3243**
Technology transfer study

Period	*Obligations*	
10/01/77-01/27/79	FY78:	TOTAL: $36,648
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Feller, I. R.	GSFC/Golden, T. S.	99-Multi-Discip

NAS 6-2602 **Pennsylvania State University** **3244**
Develop a synoptic ionization measurement system

Period	*Obligations*	
11/01/74-10/31/76	FY78:	TOTAL: $72,724
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hale, L. C.	WFC/Duke, J. R.	19-Phys Sci, NEC
	WFC/Schmidlin, F. J.	

NAS 6-2726 **Pennsylvania State University** **3245**
Stratosphere and mesosphere structure and circulation studies

Period	*Obligations*	
03/04/76-06/03/79	FY78: $37,494	TOTAL: $87,415
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Olivero, J.	WFC/Duke, J. R.	31-Atmos Sci
	WFC/Schmidlin, F. J.	

NAS 6-2818 **Pennsylvania State University** **3246**
Develop a two-dimensional numerical model to test the relationship of rapid mesospheric warmings to intense tropospheric convection

Period	*Obligations*	
03/01/77-08/31/78	FY78:	TOTAL: $21,667
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Clark, J. H.	WFC/Schmidlin, F. J.	31-Atmos Sci

NAS 6-2826 **Pennsylvania State University** **3247**
Analysis of stratospheric and mesospheric data

Period	*Obligations*	
04/18/77-07/17/78	FY78:	TOTAL: $11,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hale, L. C.	WFC/Schmidlin, F. J.	31-Atmos Sci
	WFC/Duke, J. R.	

NAS 8-32046 **Pennsylvania State University** **3248**
Dynamic structure of stable atmospheric boundary layer

Period	*Obligations*	
09/09/76-03/10/78	FY78:	TOTAL: $34,837
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Blackadar, A. K.	MSFC/Fichtl, G. H.	31-Atmos Sci
	MSFC/Camp, D. W.	

NAS 9-15427 **Pennsylvania State University** **3249**
Interactive graphics software/techniques development

Period	*Obligations*	
10/01/77-09/30/78	FY78: $61,000	TOTAL: $61,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Stocker, F. J.	JSC/Raney, J. L.	22-Computer Science

NAS 9-15566 **Pennsylvania State University** **3250**
Purification and cultivation of human pituitary growth hormone secreting cells

Period	*Obligations*	
05/01/78-05/01/79	FY78: $85,000	TOTAL: $85,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hymer, W. C.	JSC/Morrison, D. R.	51-Biology

NAS 9-15584 **Pennsylvania State University** **3251**
Kidney cell electrophoresis

Period	*Obligations*	
05/01/78-05/01/79	FY78: $49,979	TOTAL: $49,979
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Todd, P. W.	JSC/Morrison, D. R.	52-Clinical Med

NGL 39-009-003 **Pennsylvania State University** **3252**
Research on electron densities in upper ionosphere, including studies of rocket & separating capsule experimental techniques

Period	*Obligations*	
03/01/61-10/31/80	FY78: $100,000	TOTAL: $2,078,661
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Nisbet, J. S.	HQ-ST/King, J. H.	13-Physics
	HQ-ST/Schmerling, E. R.	

NGL 39-009-007 **Pennsylvania State University** **3253**
Investigation & analysis of flow phenomena of secondary motions in axial flow inducers

Period	*Obligations*	
12/15/63-03/01/79	FY78:	TOTAL: $279,750
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lakshminarayana, B.	LERC/Britsch, W. R.	41-Aero Engr

NGL 39-009-010 **Pennsylvania State University** **3254**
Research to establish criteria for recognition of ancient meteorite impact craters whose characteristic surface forms have been obliterated by erosion

Period	*Obligations*	
08/08/63-12/31/78	FY78:	TOTAL: $169,563
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gold, D. P.	HQ-SL/Quaide, W. L.	32-Geological Sci

NGL 39-009-032 **Pennsylvania State University** **3255**
Study and evaluation of the constant-momentum mass spectrometer for ion analysis in the D and E regions of the ionosphere

Period	*Obligations*	
05/28/65-11/30/78	FY78:	TOTAL: $707,932
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kendall, B. R.	WFC/Ballance, C. W., Jr.	13-Physics
	WFC/Gray, J. W.	

NGR 39-009-034 **Pennsylvania State University** **3256**
A study of low-cycle fatigue under multiaxial in-phase and out-of-phase strain cycling

Period	*Obligations*	
06/26/68-07/01/78	FY78:	TOTAL: $198,654
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Zamrik, S. Y.	LERC/Hirschberg, M. H.	
	LERC/Halford, G. R.	47-Materials Engr

NGR 39-009-077 **Pennsylvania State University** **3257**
Investigation of near critical and supercritical burning of fuel droplets

Period	*Obligations*	
08/17/66-12/31/78	FY78: $21,175	TOTAL: $331,360
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Faeth, G. M.	LERC/Priem, R. J.	42-Astro Engr

NGR 39-009-180 **Pennsylvania State University** **3258**
Detection of microorganisms in their natural habitat

Period	*Obligations*	
06/12/70-09/30/78	FY78: $34,158	TOTAL: $285,141
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Casida, L. E., Jr.	HQ-SB/Young, R. S.	51-Biology

NGR 39-009-270 **Pennsylvania State University** **3259**
Study in jet noise

Period	*Obligations*	
06/25/73-08/30/77	FY78:	TOTAL: $45,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Arndt, R. E.	LERC/Stone, J. R.	41-Aero Engr

NSG 1308 **Pennsylvania State University** **3260**
A proposed study of propellers for general aviation aircraft

Period	*Obligations*	
07/01/76-10/31/78	FY78: $49,891	TOTAL: $99,763
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McCormick, B. W.	LARC/Fisher, B. D.	41-Aero Engr
	LARC/Hall, A. W.	

NSG 1328 **Pennsylvania State University** **3261**
An investigation of optimization techniques for drawing computer graphics displays

Period	*Obligations*	
09/07/76-09/06/77	FY78:	TOTAL: $17,338
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Stocker, F. R.	LARC/Smith, R. F.	22-Computer Science

NSG 1387 **Pennsylvania State University** **3262**
Growth, perfection, and characterization of triglycine sulfate: A model for zero gravity growth

Period	*Obligations*	
03/01/77-08/31/79	FY78:	TOTAL: $50,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
White, W. B.	LARC/Fripp, A. L.	47-Materials Engr
Spear, K. E.	LARC/Crouch, R. K.	
Vedam, K.		

NSG 2122 **Pennsylvania State University** **3263**
Subfornical organ and salt/water balance

Period	*Obligations*	
01/01/76-12/31/78	FY78: $23,800	TOTAL: $67,838
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Severs, W. B.	ARC/Keil, L. C. ARC/Danellis, J. V.	53-Other Medical

NSG 2241 **Pennsylvania State University** **3264**
High polymers based on posphazene and other inorganic systems

Period	*Obligations*	
06/15/77-06/14/78	FY78:	TOTAL: $20,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Allcock, H. R.	ARC/Fewell, L. L.	12-Chemistry

NSG 3012 **Pennsylvania State University** **3265**
Compressor or fan rotor wake characteristics

Period	*Obligations*	
06/28/74-10/27/79	FY78: $100,656	TOTAL: $269,038
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lakshminarayana, B.	LERC/Heidmann, M. F. LERC/Feiler, C. E.	41-Aero Engr

NSG 3016 **Pennsylvania State University** **3266**
Microstructural parameters and the impact resistance of ceramic turbine materials

Period	*Obligations*	
07/01/74-01/31/79	FY78:	TOTAL: $140,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bradt, R. C.	LERC/Sanders, W.A.	47-Materials Engr

NSG 3031 **Pennsylvania State University** **3267**
The unsteady response of an axial flow fan to inlet distortions

Period	*Obligations*	
09/01/74-05/31/78	FY78:	TOTAL: $56,641
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Henderson, R. E.	LERC/Gelder, T. F.	41-Aero Engr

NSG 3032 **Pennsylvania State University** **3268**
Blade end wall flows in compressors

Period	*Obligations*	
09/01/74-08/31/79	FY78:	TOTAL: $50,801
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lakshminarayana, B.	LERC/Sockol, P. M.	41-Aero Engr

NSG 3097 **Pennsylvania State University** **3269**
Surface charge kinetics near metal-dielectric interfaces exposed to kilovolt electron flux

Period	*Obligations*	
03/01/76-08/30/77	FY78:	TOTAL: $29,838
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Robinson, J. W.	LERC/Berkopec, F. D. LERC/Stevens, N. J.	49-Engr, NEC

NSG 3166 **Pennsylvania State University** **3270**
Mapping of electrical potential distributions with charged particle beams

Period	*Obligations*	
11/01/77-06/01/79	FY78: $34,250	TOTAL: $34,250
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Robinson, J. W.	LERC/Stevens, N. J.	13-Physics

NSG 3212 **Pennsylvania State University** **3271**
End wall flows in rotors and stators of a single stage compressor

Period	*Obligations*	
08/01/78-07/31/79	FY78: $61,114	TOTAL: $61,114
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lakshminarayana, B.	LERC/Sockol, P. M. LERC/Sandercock, D. M.	41-Aero Engr

NSG 5185 **Pennsylvania State University** **3272**
Research of the nature and subsurface character of lineaments in Pennsylvania

Period	*Obligations*	
07/01/77-09/30/79	FY78: $33,205	TOTAL: $65,843
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Alexander, S. S. Gold, D. P.	GSFC/Allenby, R. J. GSFC/Thomas, H. H.	32-Geological Sci

NSG 5205 **Pennsylvania State University** **3273**
Utilization of satellite data in mesoscale models

Period	*Obligations*	
09/01/77-11/30/78	FY78:	TOTAL: $46,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Anthes, R. A.	GSFC/Adler, R. F.	31-Atmos Sci

NSG 5212 **Pennsylvania State University** **3274**
Study of high latitude thermospheric densities and flow patterns

Period	*Obligations*	
10/01/77-03/31/79	FY78:	TOTAL: $29,012
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Nisbet, J. S.	GSFC/Spencer, N. W.	13-Physics

NSG 5276 **Pennsylvania State University** **3275**
Sythesis of regional crust and upper-mantle structure from seismic and gravity data

Period	*Obligations*	
06/15/78-06/14/79	FY78: $35,000	TOTAL: $35,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Alexander, S. S. Lavin, P. M.	GSFC/Allenby, R. J. GSFC/Mead, G. D.	32-Geological Sci

NSG 6004 **Pennsylvania State University** **3276**
Studies of mesospheric ionization

Period	*Obligations*	
10/01/75-09/30/78	FY78: $25,000	TOTAL: $85,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ferguson, G. A.	WFC/Gray, J. W. WFC/Pless, R. H.	19-Phys Sci, NEC

NSG 7120 **Pennsylvania State University** **3277**
Physicochemical basis for evaluating lunar petrogenesis

Period	*Obligations*	
02/01/75-04/30/79	FY78:	TOTAL: $67,894
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Muan, A.	HQ-SL/Goldstein, B. E.	
	HQ-SL/Quaide, W. L.	32-Geological Sci

NSG 7193 **Pennsylvania State University** **3278**
Temporal and spatial stress distribution in the lunar interior and related phenomena

Period	*Obligations*	
03/01/76-12/31/78	FY78:	TOTAL: $75,182
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Alexander, S. S.	HQ-SL/Goldstein, B. E.	
Sammis, C.	HQ-SL/Quaide, W. L.	32-Geological Sci

NSG 7350 **Pennsylvania State University** **3279**
Wind tunnel test and laboratory evaluation of photo ionization probe

Period	*Obligations*	
05/01/77-07/31/78	FY78:	TOTAL: $25,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hale, L. C.	HQ-ST/Tilford, S. G.	31-Atmos Sci
York, T. M.		

NSG 7465 **Pennsylvania State University** **3280**
Solubilities of C-O-S volatiles in lunar magmas and vapors

Period	*Obligations*	
07/01/78-06/30/79	FY78: $26,218	TOTAL: $26,218
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Eggler, D.	HQ-SL/Quaide, W.	32-Geological Sci

NAS 9-14979 **Temple University** **3281**
Ultraviolet-radiation induced skin cancer in experimental animals

Period	*Obligations*	
04/26/76-07/31/79	FY78: $71,500	TOTAL: $224,993
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Urbach, F.	JSC/Nachtwey, D. S.	51-Biology

NAS 9-15207 **Temple University** **3282**
Development of Robertson-Berger sunburning ultraviolet meter computer-compatible readout modification

Period	*Obligations*	
01/03/77-09/01/77	FY78:	TOTAL: $10,040
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Urbach, F.	JSC/Nachtwey, D. S.	53-Other Medical

NAS 5-25136 **University of Pennsylvania** **3283**
Synthetic aperture radiometry study

Period	*Obligations*	
08/18/78-03/17/79	FY78: $9,900	TOTAL: $9,900
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kritikos, H. N.	GSFC/Shiue, J.	13-Physics

NAS 8-33088 **University of Pennsylvania** **3284**
X-ray variability of high galactic latitude sources

Period	*Obligations*	
06/01/78-05/31/79	FY78: $17,145	TOTAL: $17,145
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Shen, B. S.	MSFC/Dailey, C. C.	11-Astronomy

NAS 9-15531 **University of Pennsylvania** **3285**
Development phase for Spacelab experiment (INS 101)

Period	*Obligations*	
03/01/78-07/01/81	FY78: $148,774	TOTAL: $148,774
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Brown, A. H.	JSC/Lintott, J. E.	51-Biology

NGR 39-010-149 **University of Pennsylvania** **3286**
Plant morphogenesis under conditions of hypo- and hypergravia

Period	*Obligations*	
09/01/73-03/31/79	FY78: $58,682	TOTAL: $370,789
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Brown, A. H.	HQ-SB/Halstead, T. W.	51-Biology
Dahl, A. O.	HQ-SB/Geib, D. S.	

NSG 5296 **University of Pennsylvania** **3287**
Ultraviolet spectroscopy of peculiar eclipsing binary stars

Period	*Obligations*	
08/01/78-07/31/79	FY78: $12,871	TOTAL: $12,871
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Koch, R. H.	GSFC/Boggess, A.	11-Astronomy
	GSFC/Fischel, D.	

NAS 2-9871 **University of Pittsburgh** **3288**
Vestibular receptors in space

Period	*Obligations*	
10/15/77-04/04/79	FY78: $283,809	TOTAL: $283,809
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gualtierierotti, T.	ARC/Mah, R. W.	59-Life Sci, NEC
Beacchi, F.		

NAS 5-22892 **University of Pittsburgh** **3289**
Laser plasma laser system study

Period	*Obligations*	
02/26/76-02/26/79	FY78: $10,040	TOTAL: $42,918
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Falk, J.	GSFC/Kostiuk, T.	43-Chem Engr

NAS 5-25013 **University of Pittsburgh** **3290**
Study of infrared detection by intracavity upconversion

Period	*Obligations*	
05/09/78-06/08/79	FY78: $44,817	TOTAL: $44,817
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Falk, J.	GSFC/Kostiuk, T.	13-Physics
	GSFC/Ogilvie, K. W.	

NASW 3042 **University of Pittsburgh** **3291**
Operation of an industrial applications center

Period	*Obligations*	
06/29/77-03/31/78	FY78:	TOTAL: $324,750
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Unavailable	HQ-ET/Bivins, R. G.	99-Multi-Discip

NGL 39-011-013 **University of Pittsburgh** **3292**
Investigation of airglow excitation mechanisms using atomic beam techniques

Period	*Obligations*	
04/26/65-01/31/80	FY78:	TOTAL: $671,734
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fite, W. L.	HQ-SL/Fellows, R. F. HQ-SL/Brunk, W. E.	31-Atmos Sci

NGL 39-011-030 **University of Pittsburgh** **3293**
Studies of excitation and collision deactivation of measurable A3 state of nitrogen in the aurora and day airglow

Period	*Obligations*	
05/07/65-04/30/80	FY78: $66,000	TOTAL: $924,352
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Zipf, E. C., Jr.	HQ-SL/Donn, B. D. HQ-SL/Brunk, W. E.	31-Atmos Sci

NGL 39-011-085 **University of Pittsburgh** **3294**
Studies relating to surfaces of moon & planets

Period	*Obligations*	
03/17/69-03/31/79	FY78:	TOTAL: $339,299
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cassidy, W. A. Hapke, B. W.	HQ-SL/Quaide, W. L.	32-Geological Sci

NGR 39-011-137 **University of Pittsburgh** **3295**
Dissociative recombination coefficients for planetary ionospheric ions

Period	*Obligations*	
07/28/71-05/31/78	FY78:	TOTAL: $174,512
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Biondi, M. A.	HQ-SL/Fellows, R. F. HQ-SL/Brunk, W. E.	31-Atmos Sci

NGR 39-011-161 **University of Pittsburgh** **3296**
Laboratory studies of kinetics of tropospheric and stratospheric aircraft pollutant reactions using atomic and molecular resonance fluorescence detection

Period	*Obligations*	
06/03/73-03/01/79	FY78: $60,000	TOTAL: $268,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kaufman, F.	HQ-ST/Simon, N. K. HQ-ST/Tilford, S. G.	12-Chemistry

NSG 2116 **University of Pittsburgh** **3297**
Feasibility of an instrument for the detection of the perturbative effects of planetary systems

Period	*Obligations*	
01/01/76-12/31/78	FY78:	TOTAL: $19,269
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gatewood, G. D.	ARC/Billingham, J.	11-Astronomy

NSG 2117 **University of Pittsburgh** **3298**
Survey nearby stars for the perturbative effects of extrasolar planetary systems

Period	*Obligations*	
01/01/76-12/31/78	FY78: $20,000	TOTAL: $47,644
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gatewood, G. D.	ARC/Black, D. C.	11-Astronomy

NSG 3002 **University of Pittsburgh** **3299**
Dissolved chloride and ammonium ions miniature electrodes for in situ water quality

Period	*Obligations*	
02/15/74-06/30/78	FY78:	TOTAL: $99,174
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Liu, C. C.	LERC/Fordyce, J. S. LERC/Leibecki, H. F.	12-Chemistry

NSG 3163 **University of Pittsburgh** **3300**
Determination of efficiencies, loss mechanisms and performance degradation factors in chopper controlled dc vehicle motors

Period	*Obligations*	
09/01/77-06/30/79	FY78: $49,730	TOTAL: $90,307
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hamilton, H. B.	LERC/McBrien, E. F.	45-Elec Engr

NSG 3168 **University of Pittsburgh** **3301**
Studies of magnetostriction and spin polarized band structures of rare earth intermetallics

Period	*Obligations*	
09/26/77-01/31/79	FY78:	TOTAL: $52,804
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wallace, W. E. Sankar, S. G.	LERC/Brown, G. V.	13-Physics

NSG 3214 **University of Pittsburgh** **3302**
Investigation of initiation stage of hot corrosion in Nu-base alloys

Period	*Obligations*	
09/01/78-09/01/81	FY78: $59,996	TOTAL: $59,996
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Meier, G. H.	LERC/Kohl, F. J. LERC/Stearns, C. A.	47-Materials Engr

PENNSYLVANIA (Continued)

NSG 5270 **University of Pittsburgh** **3303**
Lithological characterization of crystalline basement rock provinces in the United States

Period	*Obligations*	
04/15/78-04/14/79	FY78: $22,355	TOTAL: $22,355
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lidiak, E. G.	GSFC/Thomas, H. H.	32-Geological Sci
	GSFC/Mead, G. D.	

NSG 6011 **University of Pittsburgh** **3304**
Studies of the physics and chemistry of the terrestrial atmosphere

Period	*Obligations*	
10/01/75-09/30/79	FY78: $233,832	TOTAL: $529,967
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Zipf, E. C., Jr.	WFC/Gray, J. W.	19-Phys Sci, NEC
	WFC/Pless, R. H.	

NSG 7147 **University of Pittsburgh** **3305**
Photometric analyses of Mariner 10 images of Venus and Mercury

Period	*Obligations*	
06/23/75-12/01/78	FY78: $28,768	TOTAL: $93,780
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hapke, B. W.	HQ-SL/Boyce, J. M.	11-Astronomy

NSG 9056 **University of Pittsburgh** **3306**
Measurement of reflectivities of rocks, minerals, glasses in the vacuum ultraviolet

Period	*Obligations*	
03/01/77-02/28/79	FY78: $47,000	TOTAL: $102,497
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hapke, B. W.	JSC/Harris, J. W.	13-Physics

RHODE ISLAND

NAS 1-9680 **Brown University** **3307**
Participation in the science planning for the Viking 1975 missions in the area of imaging

Period	*Obligations*	
03/25/70-09/30/78	FY78: $50,000	TOTAL: $764,682
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mutch, T. A.	LARC/Williams, T. S., Jr.	
	LARC/Glenny, W. R.	99-Multi-Discip

NGR 40-002-088 **Brown University** **3308**
Analysis of Martian geologic features of earth analogs

Period	*Obligations*	
10/20/69-11/29/78	FY78: $154,132	TOTAL: $481,369
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mutch, T. A.	HQ-SL/Dwornik, S.E.	32-Geological Sci
	HQ-SL/Boyce, J. M.	

NGR 40-002-116 **Brown University** **3309**
Lunar basins processes and structure

Period	*Obligations*	
02/20/73-01/31/80	FY78: $39,982	TOTAL: $442,539
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Head, J. W.	HQ-SL/Goldstein, B. E.	
Mutch, T. A.	HQ-SL/Quaide, W. L.	32-Geological Sci

NGR 40-002-123 **Brown University** **3310**
Lunar sample analysis

Period	*Obligations*	
05/01/73-01/31/79	FY78: $44,300	TOTAL: $192,223
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rutherford, M. J.	JSC/Harris, J. W.	32-Geological Sci

NSG 3118 **Brown University** **3311**
Effect of processing parameters on reaction bonding silicon nitride

Period	*Obligations*	
08/01/76-10/01/79	FY78: $40,000	TOTAL: $138,200
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Richman, M. H.	LERC/Herbell, T. P.	47-Materials Engr

NSG 1008 **University of Rhode Island** **3312**
Development of three dimensional numerical pollutant transport modeling techniques for continental shelf applications

Period	*Obligations*	
03/01/74-10/31/78	FY78:	TOTAL: $72,874
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Spaulding, M. L.	LARC/Pritchard, E. B.	49-Engr, NEC

NSG 1461 **University of Rhode Island** **3313**
Perform a sensitivity analysis on algorithms used to quantify pollutant distributions in coastal waters using remotely sensed data

Period	*Obligations*	
10/15/77-12/31/78	FY78: $10,976	TOTAL: $10,976
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cornillon, P. C.	LARC/Campbell, J.W.	33-Oceanography
	LARC/Pritchard, E. B.	

NSG 1495 **University of Rhode Island** **3314**
Use of numerical continental shelf circulation and pollutant transport models for analysis of remotely sensed data

Period	*Obligations*	
02/01/78-01/31/79	FY78: $29,098	TOTAL: $29,098
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Spaulding, M. L.	LARC/Campbell, J.W.	33-Oceanography

NSG 7414 **University of Rhode Island** **3315**
Paleoflow processes and formation of Martian channels

Period	*Obligations*	
10/01/77-09/30/78	FY78: $15,216	TOTAL: $15,216
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Boothroyd, J. C.	HQ-SL/Dwornik, S.E.	32-Geological Sci
	HQ-SL/Boyce, J. M.	

SOUTH CAROLINA

NAS 9-13669 **Clemson University - Clemson** **3316**
High temperature hyperfiltration water reclamation unit

Period	*Obligations*	
08/14/73-02/15/78	FY78:	TOTAL: $122,050
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gaddis, J. L.	JSC/Reveley, W. F.	46-Mech Engr
Brandon, C. A.		

NSG 1297 **Clemson University - Clemson** **3317**
Crack growth in bonded isotropic and orthotropic elastic half-planes

Period	*Obligations*	
04/01/76-10/15/79	FY78: $65,911	TOTAL: $98,058
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Goree, J. G.	LARC/Poe, C. C., Jr.	46-Mech Engr
	LARC/Kennedy, J. M.	

NSG 1411 **Clemson University - Clemson** **3318**
Optimization of fiber reinforced structures to satisfy aeroelastic requirements

Period	*Obligations*	
07/01/77-06/30/79	FY78:	TOTAL: $29,355
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rudisill, C. S.	LARC/Doggett, R. V., Jr.	41-Aero Engr
Bauld, N. R., Jr.		

NSG 3225 **Clemson University - Clemson** **3319**
Development of a percutaneous implant using ion-beam sputtering technique

Period	*Obligations*	
09/15/78-09/15/79	FY78: $16,545	TOTAL: $16,545
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Park, J. B.	LERC/Weigand, A. J.	53-Other Medical
VonRecum, A. F.	LERC/Banks, B. A.	
Kenner, G. H.		

NSG 8044 **South Carolina State College** **3320**
Direct current transformers with magnetoresistive secondaries

Period	*Obligations*	
09/13/76-08/08/78	FY78:	TOTAL: $24,924
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Payne, J. E.	MSFC/Urban, E. W.	13-Physics
	MSFC/Kent, M. I.	

NAS 8-28660 **University of South Carolina** **3321**
Study of microwave down-converters operating in KU band

Period	*Obligations*	
04/19/72-01/31/79	FY78:	TOTAL: $104,998
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fellers, R. G.	MSFC/Lowrey, D. O.	45-Elec Engr
	MSFC/Stephens, J. K.	

NGL 41-002-003 **University of South Carolina** **3322**
Infrared spectra of molecules & materials of astrophysical interest

Period	*Obligations*	
05/10/65-05/31/79	FY78:	TOTAL: $280,498
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Durig, J. R.	HQ-SL/Fellows, R. F.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	

NSG 1334 **University of South Carolina** **3323**
Comparative spectral radiometry of primary producers in a salt marsh estuary

Period	*Obligations*	
08/09/76-01/08/78	FY78:	TOTAL: $21,604
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Zingmark, R. G.	LARC/Katzberg, S. J.	39-Env Sci, NEC
	LARC/Jobson, D. J.	

NSG 1523 **University of South Carolina** **3324**
Feasibility of remote sensing benthic microalgae

Period	*Obligations*	
04/01/78-04/30/79	FY78: $2,450	TOTAL: $2,450
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Zingmark, R. G.	LARC/Jobson, D. J.	39-Env Sci, NEC
	LARC/Katzberg, S. J.	

NSG 7076 **University of South Carolina** **3325**
Paleohydrology of Mars

Period	*Obligations*	
07/01/74-09/30/78	FY78: $30,000	TOTAL: $104,599
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Nummedal, D.	HQ-SL/Dwornik, S.E.	32-Geological Sci
	HQ-SL/Boyce, J. M.	

NSG 7096 **University of South Carolina** **3326**
A model for the formation of protocells from glycine-rich proteimoids

Period	*Obligations*	
10/08/74-11/30/78	FY78: $28,000	TOTAL: $110,498
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rohlfing, D. L.	HQ-SB/Young, R. S.	51-Biology

SOUTH DAKOTA

NAS 9-15522 **South Dakota School of Mines & Tech** **3327**
Development of microprocessor-controlled Lower Body Negative Pressure (LBNP) system

Period	*Obligations*	
05/15/78-05/15/79	FY78: $23,000	TOTAL: $23,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gowen, R. J.	JSC/Hull, W. E.	51-Biology

SOUTH DAKOTA (Continued)

NAS 5-24206 **South Dakota State University** 3328
Applications of heat capacity mapping mission satellite data to the study of urban heating patterns

Period	Obligations	
06/22/77-06/21/79	FY78:	TOTAL: $77,270
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Moore, D.	GSFC/Gordon, F., Jr.	99-Multi-Discip

NAS 5-24358 **South Dakota State University** 3329
Soil moisture workshop

Period	Obligations	
11/08/77-09/07/78	FY78: $44,793	TOTAL: $44,793
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Myers, V. I.	GSFC/Schmugge, T. J.	39-Env Sci, NEC
Moore, D. G.		

NAS 9-15345 **South Dakota State University** 3330
Preparation of agrophysical maps

Period	Obligations	
05/17/77-12/15/78	FY78: $12,460	TOTAL: $29,460
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Westin, F. C.	JSC/Downs, J.	32-Geological Sci

NGL 42-003-007 **South Dakota State University** 3331
Remote sensing of soils, land forms, and land use in the northern great plains in preparation for ERTS applications

Period	Obligations	
07/27/70-06/30/80	FY78: $150,000	TOTAL: $1,350,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Myers, V. I.	HQ-ET/Vitale, J. A.	39-Env Sci, NEC

TENNESSEE

NGR 43-021-002 **Fisk University** 3332
Optical effect of contamination of infrared windows by materials in outer space

Period	Obligations	
11/01/73-04/30/78	FY78:	TOTAL: $107,187
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Silberman, E.	MSFC/Kroes, R. L.	13-Physics
Springer, J.	MSFC/Kent, M. I.	

NSG 5297 **Fisk University** 3333
Neutrino interactions at cosmic ray energies

Period	Obligations	
09/01/78-08/31/79	FY78: $27,500	TOTAL: $27,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mickens, R. E.	GSFC/Stecker, F. W.	13-Physics

NSG 8035 **Fisk University** 3334
Asymptotic properties of scattering amplitudes

Period	Obligations	
06/02/76-12/01/78	FY78: $1,941	TOTAL: $55,641
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mickens, R. E.	MSFC/Kent, M. I.	12-Chemistry

NSG 8060 **Fisk University** 3335
Optical characterization of zero-gravity grown crystals

Period	Obligations	
04/17/78-02/16/79	FY78: $49,175	TOTAL: $49,175
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Silberman, E.	MSFC/Kroes, R. L.	13-Physics
	MSFC/Kent, M. I.	

NAS 5-23801 **Meharry Medical College** 3336
Investigation of medical information management system application in a complex health care facility

Period	Obligations	
12/07/76-02/07/79	FY78:	TOTAL: $55,564
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Anderson, R. S.	GSFC/Alterescu, S.	52-Clinical Med
Braun, G.	GSFC/Friedman, D. S.	

NAS 9-15441 **Tennessee State University** 3337
An analysis of methods and techniques used by government agencies in managing indirect costs at major aerospace firms

Period	Obligations	
10/01/77-09/30/78	FY78:	TOTAL: $32,568
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sampson, C.	JSC/Easley, R. E.	99-Multi-Discip

NGT 43-014-750 **Tennessee State University** 3338
Training of undergraduate students in sciences and engineering

Period	Obligations	
06/01/75-05/31/79	FY78: $14,000	TOTAL: $56,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Malkani, M. J.	HQ-LU/Pohly, J. G.	49-Engr, NEC
	HQ-U/Jenkins, H. G.	

NSG 8032 **Tennessee State University** 3339
An investigation of the motion of small particles as related to the formulation of zero gravity experiments

Period	Obligations	
01/01/76-12/31/77	FY78:	TOTAL: $45,894
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Burns, R. G.	MSFC/Kent, M. I.	46-Mech Engr

NAS 8-31564 **Tennessee Technological University** 3340
Study of utilization of solar energy for residential heating and cooling application

Period	Obligations	
07/01/75-09/01/77	FY78:	TOTAL: $32,890
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Griggs, E. I.	MSFC/Humphries, W. R.	31-Atmos Sci
	MSFC/Hall, C. F.	

NGR 43-003-015 **Tennessee Technological University** 3341
Investigation of open-loop amplification of Reynolds number dependent processes

Period	Obligations	
09/16/71-01/01/79	FY78: $25,000	TOTAL: $157,750
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ventrice, M. B.	LERC/Priem, R. J.	46-Mech Engr
Peddieson, J.		

NAS 5-20672 University of Tennessee - Knoxville 3342
Molecular absorption parameters study

Period	Obligations	
07/29/74-08/31/77	FY78:	TOTAL: $26,410
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fox, K.	GSFC/Kunde, V. G. GSFC/Hanel, R. A.	31-Atmos Sci

NAS 5-24250 University of Tennessee - Knoxville 3343
A study of modulation and data-transfer techniques applied to satellite data collection

Period	Obligations	
08/02/77-08/02/78	FY78:	TOTAL: $57,335
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rochelle, R. W. Smith, S.	GSFC/Allen, W.	45-Elec Engr

NAS 5-25101 University of Tennessee - Knoxville 3344
Energy conservation task

Period	Obligations	
06/23/78-02/23/79	FY78: $18,759	TOTAL: $18,759
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Snyder, W. M.	GSFC/Golden, T. S.	39-Env Sci, NEC

NAS 8-29271 University of Tennessee - Knoxville 3345
Application of image enhancement techniques to remote manipulator operations

Period	Obligations	
01/08/73-11/14/78	FY78: $1,700	TOTAL: $203,716
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gonzalez, R. C.	MSFC/Huggins, C. T. MSFC/Borelli, M. T.	45-Elec Engr

NAS 8-29584 University of Tennessee - Knoxville 3346
Study of wind profiles over nonuniform surface relative to ground design of aircraft & space vehicles

Period	Obligations	
02/02/73-09/12/78	FY78: $5,000	TOTAL: $426,446
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Frost, W.	MSFC/Sloan, J.	46-Mech Engr

NAS 8-31718 University of Tennessee - Knoxville 3347
Thunderstorm modeling and satellite ground truth cloud studies

Period	Obligations	
11/14/75-10/06/78	FY78:	TOTAL: $68,807
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Frost, W. Connell, J.	MSFC/Hill, K. MSFC/Turner, R.	31-Atmos Sci

NAS 8-31980 University of Tennessee - Knoxville 3348
Tennessee Remote Sensing Applications Research

Period	Obligations	
04/13/76-04/12/77	FY78:	TOTAL: $15,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Shahroki, F.	MSFC/Paludan, C. T. MSFC/Daniels, J. L., Jr.	39-Env Sci, NEC

NAS 8-32031 University of Tennessee - Knoxville 3349
Field study of advection fog

Period	Obligations	
09/01/76-03/21/79	FY78: $35,000	TOTAL: $64,985
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Connell, J. R.	MSFC/Vaughan, O. H.	31-Atmos Sci

NAS 8-32118 University of Tennessee - Knoxville 3350
Natural wind environment criteria for the design of wind machines

Period	Obligations	
06/28/76-12/13/77	FY78:	TOTAL: $40,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Frost, W.	MSFC/Fichtl, G. H. MSFC/Alexander, M.	31-Atmos Sci

NAS 8-32484 University of Tennessee - Knoxville 3351
Selected fluid analysis for space processing programs

Period	Obligations	
06/10/77-06/09/78	FY78:	TOTAL: $14,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Collins, F. Frost, W.	MSFC/Schafer, C. F. MSFC/Fichtl, G. H.	47-Materials Engr

NAS 8-32611 University of Tennessee - Knoxville 3352
Ice chambers design and warm fog microphysics applicable to the understanding and interpretation of flight experiments under low gravity conditions

Period	Obligations	
07/29/77-06/30/79	FY78: $21,912	TOTAL: $37,708
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Carter, J. M.	MSFC/Anderson, B. J. MSFC/Vaughan, O. H.	39-Env Sci, NEC

NAS 8-32635 University of Tennessee - Knoxville 3353
Feasibility study of slant-range visibility by lidar technique

Period	Obligations	
09/09/77-10/14/78	FY78:	TOTAL: $13,269
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kohl, R. H.	MSFC/Camp, D. W. MSFC/Moore, W. W., Jr.	31-Atmos Sci

NAS 8-32692 University of Tennessee - Knoxville 3354
Gust gradient analysis

Period	Obligations	
07/07/78-05/06/79	FY78: $86,875	TOTAL: $86,875
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Frost, W.	MSFC/Camp, D. W. MSFC/Thomas, P. E.	31-Atmos Sci

NAS 8-33065 University of Tennessee - Knoxville 3355
Accuracy analysis of pointing control system of solar power station

Period	Obligations	
04/26/78-12/12/78	FY78: $10,000	TOTAL: $10,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hung, J. C. Peebles, P. Z.	MSFC/Guttman, C. H.	46-Mech Engr

NAS 8-33225 University of Tennessee - Knoxville 3356
Air breathing engine/trajectory optimization study

Period	Obligations	
09/29/78-09/29/79	FY78: $17,026	TOTAL: $17,026
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Smith, V. K., III	MSFC/Mercier, D. R. MSFC/Stafford, W. H.	41-Aero Engr

NAS 9-15164 University of Tennessee - Knoxville 3357
Influence of space flight on erythropoietin activity and inhibition

Period	Obligations	
10/21/76-05/01/79	FY78: $58,600	TOTAL: $120,600
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Chen, J. P.	JSC/Kimzey, S. L.	52-Clinical Med

NGL 43-001-006 University of Tennessee - Knoxville 3358
Spectroscopic studies of life shape of atmospheric gases & of absorption bands of inorganic solids

Period	Obligations	
01/07/64-09/30/79	FY78:	TOTAL: $1,318,628
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gailar, N. M.	HQ-SL/Fellows, R. F. HQ-SL/Brunk, W. E.	31-Atmos Sci

NGL 43-001-140 University of Tennessee - Knoxville 3359
Experimental investigations of opaque minerals and cooling history of lunar rocks

Period	Obligations	
09/01/73-01/31/80	FY78: $32,679	TOTAL: $408,855
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Taylor, L. A.	JSC/Harris, J. W.	11-Astronomy

NGR 43-001-134 University of Tennessee - Knoxville 3360
Research on fan noise caused by fluctuating lift, inlet turbulence, and distortion

Period	Obligations	
06/27/73-08/31/78	FY78:	TOTAL: $47,060
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lunsdaine, E.	LERC/Dittmar, J. H.	41-Aero Engr

NSG 1171 University of Tennessee - Knoxville 3361
Study of tandem blades for helicopter rotors

Period	Obligations	
06/01/75-08/31/77	FY78:	TOTAL: $70,465
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lumsdaine, E.	LARC/Hammond, C. E.	41-Aero Engr

NSG 1224 University of Tennessee - Knoxville 3362
A study of unsteady transonic flow analysis

Period	Obligations	
08/07/75-01/06/79	FY78: $25,650	TOTAL: $70,770
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kimble, K. R. Wu, J. M.	LARC/Bland, S. R. LARC/Bennett, R. M.	41-Aero Engr

NSG 1391 University of Tennessee - Knoxville 3363
A high order accurate finite element algorithm for high Reynolds number flow prediction

Period	Obligations	
02/15/77-02/14/78	FY78:	TOTAL: $20,148
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Baker, A. J.	LARC/Smith, R. E. LARC/Shoosmith, J. N.	21-Mathematics

NSG 1529 University of Tennessee - Knoxville 3364
A split finite element algorithm for the compressible Navier-Stokes equations

Period	Obligations	
05/01/78-04/30/79	FY78: $20,669	TOTAL: $20,669
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Baker, A. J.	LARC/Smith, R. E. LARC/Shoosmith, J. N.	22-Computer Science

NSG 3173 University of Tennessee - Knoxville 3365
Assessment and development of analytical models for forced convective turbulent heat transfer in the near critical region

Period	Obligations	
11/01/77-11/01/78	FY78: $29,890	TOTAL: $29,890
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Reid, R. L.	LERC/Graham, R. W. LERC/Hendricks, R. C.	46-Mech Engr

NSG 3224 University of Tennessee - Knoxville 3366
Parametric study of potential early commercial power plants (MHD)

Period	Obligations	
11/01/78-07/31/79	FY78: $150,000	TOTAL: $150,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Dicks, J. B. Chapman, J. N. Markant, H. P.	LERC/Sovie, R. J. LERC/Seikel, G. R.	49-Engr, NEC

NSG 7049 University of Tennessee - Knoxville 3367
Line identification and lifetime measurements in the XUV and soft X-ray regions

Period	Obligations	
05/01/74-09/30/78	FY78:	TOTAL: $37,251
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sellin, I. A.	HQ-ST/Bohlin, J. D.	11-Astronomy

NSG 7413 University of Tennessee - Knoxville 3368
Petrologic studies of meteorite groups

Period	Obligations	
02/01/78-01/31/79	FY78: $21,975	TOTAL: $21,975
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McSween, H. Y. Taylor, L. A.	HQ-SL/French, B. M. HQ-SL/Quaide, W. L.	32-Geological Sci

TENNESSEE (Continued)

NSG 1455 — **University of Tennessee - Nashville** — 3369
Research in high temperature, advanced composite structures

Period	Obligations	
11/01/77-11/30/78	FY78: $38,695	TOTAL: $38,695
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Blackburn, C. L.	LARC/Robinson, J. C.	41-Aero Engr

NAS 8-30656 — **Vanderbilt University** — 3370
Study of diffusion coefficients of glasses under zero-g

Period	Obligations	
06/01/74-11/30/76	FY78:	TOTAL: $64,434
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kinser, D. L.	MSFC/Nichols, R. L. MSFC/King, H. M.	13-Physics

NAS 8-30883 — **Vanderbilt University** — 3371
Discrete component bonding and thick-film materials study

Period	Obligations	
06/26/74-10/01/76	FY78:	TOTAL: $34,896
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kinser, D. L.	MSFC/Caruso, S. V. MSFC/Filip, G. L.	47-Materials Engr

NAS 8-32437 — **Vanderbilt University** — 3372
Contamination control study

Period	Obligations	
04/01/77-03/31/78	FY78:	TOTAL: $20,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kinser, D. L.	MSFC/Caruso, S. V.	49-Engr, NEC

NAS 8-32695 — **Vanderbilt University** — 3373
Solar radiation on glasses

Period	Obligations	
06/27/78-06/25/80	FY78: $49,799	TOTAL: $49,799
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kinser, D. L.	MSFC/Nichols, R. L. MSFC/King, H. M.	47-Materials Engr

NAS 8-32894 — **Vanderbilt University** — 3374
Development and verification of stress level standards

Period	Obligations	
04/19/78-06/18/78	FY78: $7,495	TOTAL: $7,495
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wert, J. J.	MSFC/Clotfelter, W. N. MSFC/Knadler, J. M.	47-Materials Engr

NAS 9-15092 — **Vanderbilt University** — 3375
Plant enzyme investigation

Period	Obligations	
12/01/76-02/28/78	FY78:	TOTAL: $12,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Pratt, L. H.	JSC/Hoffman, R. A.	51-Biology

NSG 1235 — **Vanderbilt University** — 3376
Production and diagnostics of dense nuclear plasmas

Period	Obligations	
09/01/75-08/31/79	FY78: $57,271	TOTAL: $235,272
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lee, J. H.	LARC/Hohl, F.	13-Physics

NSG 1408 — **Vanderbilt University** — 3377
Spectroscopic studies of selected radiative transitions in alkali-rare gas excimers and alkali dimers

Period	Obligations	
06/01/77-08/31/78	FY78:	TOTAL: $10,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Tellinghuisen, J. B.	LARC/Exton, R. J.	13-Physics

NSG 7343 — **Vanderbilt University** — 3378
Ultraviolet studies of galaxies

Period	Obligations	
05/01/77-08/31/79	FY78: $19,500	TOTAL: $40,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Weedman, D. W.	HQ-SC/Roman, N. G. HQ-SC/Rosendhal, J. D.	11-Astronomy

NSG 7463 — **Vanderbilt University** — 3379
Ground-based photometry of HR 1099 coordinated with the October 1977 Copernicus campaign

Period	Obligations	
05/01/78-05/30/79	FY78: $4,224	TOTAL: $4,224
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hall, D.	HQ-SC/Roman, N. G. HQ-SC/Rosendhal, J. D.	11-Astronomy

TEXAS

NAS 9-13737 — **Baylor College of Medicine** — 3380
Analysis of body calcium

Period	Obligations	
02/01/74-12/01/78	FY78:	TOTAL: $306,304
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Costa, A. J. Brennen, C.	JSC/Hoffman, R. A. JSC/Smith, M. C., Jr.	53-Other Medical

NAS 9-14322 — **Baylor College of Medicine** — 3381
Cellular immune response study

Period	Obligations	
08/01/74-12/31/77	FY78:	TOTAL: $299,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Criswell, B. S.	JSC/Kimzey, S. L.	52-Clinical Med

NAS 9-14407 **Baylor College of Medicine** 3382
Evaluate primary irritancy and allergenicity of materials proposed for crew apparel

Period	*Obligations*	
09/19/74-06/30/79	FY78:	TOTAL: $20,978
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Duncan, W. C.	JSC/Rippstein, W. J.	52-Clinical Med

NAS 9-14546 **Baylor College of Medicine** 3383
Etiological study of motion sickness by using subhuman primates

Period	*Obligations*	
05/01/75-04/30/79	FY78: $34,999	TOTAL: $134,480
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Igarashi, M.	JSC/Homick, J. L.	51-Biology

NAS 9-14662 **Baylor College of Medicine** 3384
Influence of the external parameters of space flight on the regulation of blood volume

Period	*Obligations*	
06/01/75-11/30/78	FY78: $40,000	TOTAL: $139,975
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Johnson, P. C.	JSC/Kimzey, S. L.	52-Clinical Med

NAS 9-14715 **Baylor College of Medicine** 3385
Renal response to actual and simulated space flight

Period	*Obligations*	
06/16/75-01/31/79	FY78: $30,000	TOTAL: $100,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Suki, W. N.	JSC/Leach, C. S.	59-Life Sci, NEC

NAS 9-15457 **Baylor College of Medicine** 3386
Early detection of disease by evaluation of the cellular immune response

Period	*Obligations*	
11/01/77-10/31/78	FY78: $90,800	TOTAL: $90,800
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Criswell, B. S. Knight, V.	JSC/Kimzey, S. L.	52-Clinical Med

NAS 9-15478 **Baylor College of Medicine** 3387
Study of bone and muscle protein degradation

Period	*Obligations*	
12/01/77-11/30/78	FY78: $22,000	TOTAL: $22,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Diferrante, N.	JSC/Leach, C. S.	52-Clinical Med

NAS 9-15552 **Baylor College of Medicine** 3388
Study to generate Mars sampling requirement

Period	*Obligations*	
05/11/78-01/10/79	FY78: $10,722	TOTAL: $10,722
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Chalmers, J. H.	JSC/Walner, J. L.	51-Biology

NAS 9-15669 **Baylor College of Medicine** 3389
Null lymphocytes separation

Period	*Obligations*	
08/17/78-09/01/79	FY78: $37,382	TOTAL: $37,382
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Twomey, J. J.	JSC/Morrison, D. R.	59-Life Sci, NEC

NGR 44-095-001 **Hardin - Simmons University** 3390
Study of psychophilic organisms isolated from manufacture and assembly areas of spacecraft to be used in the Viking missions

Period	*Obligations*	
08/21/72-12/31/78	FY78: $60,000	TOTAL: $378,602
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Foster, T. L.	HQ-SB/Young, R. S.	51-Biology

NGR 44-081-001 **Houston Baptist University** 3391
Research in stellar ultraviolet spectroscopy

Period	*Obligations*	
05/20/70-12/31/78	FY78: $5,000	TOTAL: $194,335
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Modisette, J. L.	JSC/Kondo, Y.	11-Astronomy

NGR 44-081-005 **Houston Baptist University** 3392
Analysis of Copernicus 0A011 data on the MG 11 resonance doublet at 2802 and 2795a in early type stars

Period	*Obligations*	
01/21/74-01/20/79	FY78:	TOTAL: $7,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Modisette, J. L.	JSC/Kondo, Y.	11-Astronomy

NSG 5188 **Houston Baptist University** 3393
A new spectroscopic orbit for Spico based on complete phase coverage within a single cycle

Period	*Obligations*	
08/01/77-07/31/78	FY78:	TOTAL: $1,232
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Morgan, T. H.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 9038 **Houston Baptist University** 3394
Obtaining high spatial resolution planetary imagery with potential shuttle era instrumentation

Period	*Obligations*	
01/01/76-12/31/78	FY78:	TOTAL: $39,250
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Morgan, T. H.	JSC/Potter, A. E.	11-Astronomy

NSG 9064 **Houston Baptist University** 3395
Investigation of the interstellar medium

Period	*Obligations*	
01/03/78-01/02/79	FY78: $27,063	TOTAL: $27,063
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Harvel, C. A.	JSC/Henize, K. G.	31-Atmos Sci

NSG 7298 **Pan American University** **3396**
Laboratory studies of the diffuse reflectance spectra of frosts and minerals occurring on astronomical objects

Period	*Obligations*	
01/01/77-03/31/78	FY78:	TOTAL: $38,350
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Glaser, F. M.	HQ-LU/Pohly, J. G. JPL/Lebofsky, L. A.	31-Atmos Sci

NSG 9033 **Pan American University** **3397**
Experimental tests and model calculations on wheat varieties grown in India/Pakistan and in Texas

Period	*Obligations*	
08/28/75-09/30/79	FY78: $38,000	TOTAL: $148,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lemaster, E. W.	JSC/Heydorn, R. P.	39-Env Sci, NEC

NSG 9070 **Pan American University** **3398**
Laboratory studies of the diffuse reflectance spectra of frosts and minerals occuring on astronomical objects

Period	*Obligations*	
06/01/78-05/31/79	FY78: $38,850	TOTAL: $38,850
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Glaser, F. M.	JSC/Pieters, C.	11-Astronomy

NGT 44-033-750 **Prairie View A&M University** **3399**
Training of undergraduate students in sciences and engineering

Period	*Obligations*	
06/01/75-05/31/78	FY78:	TOTAL: $35,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Greaux, A. E.	HQ-LU/Pohly, J. G. HQ-U/Jenkins, H. G.	49-Engr, NEC

NSG 9006 **Prairie View A&M University** **3400**
Measurement of growth morphological and bi-directional scattering parameters of wheat

Period	*Obligations*	
06/01/74-06/30/79	FY78: $35,000	TOTAL: $133,019
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Brams, E. A.	JSC/Browne, I. D.	39-Env Sci, NEC

NAS 5-9317 **Rice University** **3401**
Reduction and analysis of data from OGO-C&D ion chamber experiment

Period	*Obligations*	
03/23/66-12/01/78	FY78:	TOTAL: $201,552
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Anderson, H. R., Jr.	GSFC/Meese, K. J.	32-Geological Sci

NAS 5-23338 **Rice University** **3402**
Theoretical predictions and data analysis

Period	*Obligations*	
02/04/74-12/31/79	FY78: $7,000	TOTAL: $11,200
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cloutier, P. A. Daniels, R.	GSFC/Taylor, H. A., Jr. GSFC/Gagnon, B. D.	13-Physics

NAS 5-25032 **Rice University** **3403**
Data analysis support for Low Energy Gamma-ray Spectrometer (LEGS) balloon program

Period	*Obligations*	
05/04/78-05/04/79	FY78: $12,615	TOTAL: $12,615
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Haymes, R. C.	GSFC/Teegarden, B. J.	31-Atmos Sci

NAS 6-1667 **Rice University** **3404**
Investigation into relationship between field aligned currents and auroral particle fluxes

Period	*Obligations*	
07/23/69-12/31/78	FY78: $165,000	TOTAL: $2,096,059
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Anderson, H. R., Jr. Cloutier, P. A.	WFC/Ballance, C. W., Jr. WFC/Gray, J. W.	11-Astronomy

NAS 8-33023 **Rice University** **3405**
Study for the electrostatic protection of the solar power satellite and rectenna

Period	*Obligations*	
06/15/78-12/15/78	FY78: $50,000	TOTAL: $50,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Few, A. A. Freeman, J. W., Jr.	MSFC/Guttman, C. H.	49-Engr, NEC

NAS 9-11827 **Rice University** **3406**
Adsorption bed models used in simulation of atmospheric control systems

Period	*Obligations*	
05/10/71-12/31/78	FY78:	TOTAL: $95,704
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Davis, S. H.	JSC/Kissinger, L. D.	43-Chem Engr

NAS 9-15212 **Rice University** **3407**
Ionosphere-microwave beam interaction study

Period	*Obligations*	
12/01/76-07/01/79	FY78:	TOTAL: $60,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gordon, W. E.	JSC/Arndt, G. D.	31-Atmos Sci

NAS 9-15274 **Rice University** **3408**
A fundamental study of liquid spray evaporation at a heated surface

Period	*Obligations*	
04/01/77-03/31/79	FY78: $22,547	TOTAL: $42,466
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wierum, F. A.	JSC/Trevino, L. A.	46-Mech Engr

NAS 9-15630 **Rice University** **3409**
Trace contaminant coadsorption by charcoal

Period	*Obligations*	
07/01/78-07/01/80	FY78: $15,000	TOTAL: $15,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Davis, S. H.	JSC/Kissinger, L. D.	43-Chem Engr

NASW 3164 **Rice University** 3410
Effects of hypogravity on respiration and photosynthesis of higher planets

Period	*Obligations*	
05/12/78-05/11/79	FY78: $20,000	TOTAL: $20,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ward, C. H.	HQ-SB/Halstead, T. W.	51-Biology

NGL 44-006-001 **Rice University** 3411
Research on physics of solid materials including study of basic laws governing behavior of solids at high temperatures

Period	*Obligations*	
05/01/72-06/30/78	FY78: $21,142	TOTAL: $4,571,142
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rorschach, H. E.	LERC/Lad, R. A.	13-Physics

NGL 44-006-012 **Rice University** 3412
Laboratory development of solar wind heavy-ion mass spectrometer

Period	*Obligations*	
06/27/64-06/30/80	FY78:	TOTAL: $1,381,736
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Michel, F. C.	HQ-ST/Cauffman, D. P. HQ-ST/Schmerling, E. R.	13-Physics

NGL 44-006-127 **Rice University** 3413
Lunar fines, their origin, evolution, and interaction with solar wind and cosmic rays

Period	*Obligations*	
02/16/71-07/31/79	FY78: $70,000	TOTAL: $562,149
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Heymann, D.	JSC/Harris, J. W.	32-Geological Sci

NGR 44-006-137 **Rice University** 3414
Analysis of data on the magnetotail and solar wind

Period	*Obligations*	
12/29/70-12/31/78	FY78: $55,000	TOTAL: $307,697
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Dessler, A. J.	HQ-ST/Taylor, W. W. HQ-ST/Schmerling, E. R.	13-Physics

NSG 5286 **Rice University** 3415
Investigation of low altitude plasma phenomena

Period	*Obligations*	
07/01/78-06/30/79	FY78: $20,000	TOTAL: $20,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Reiff, P. H.	GSFC/Spencer, N. W.	31-Atmos Sci

NSG 7015 **Rice University** 3416
Nuclear gamma-ray astronomy prospects for HEAO-B

Period	*Obligations*	
04/01/74-07/31/77	FY78:	TOTAL: $54,621
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Clayton, D. D.	HQ-SC/Sofia, S.	11-Astronomy

NSG 7032 **Rice University** 3417
Apollo data synthesis: Lunar atmosphere and ionosphere

Period	*Obligations*	
04/01/74-02/28/79	FY78: $39,746	TOTAL: $90,307
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Michel, F. C.	HQ-SL/Quaide, W. L. HQ-SL/French, B. E.	31-Atmos Sci

NSG 7043 **Rice University** 3418
Research on planetary atmospheres

Period	*Obligations*	
03/01/74-02/29/80	FY78:	TOTAL: $211,190
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Chamberlain, J. W.	HQ-SL/Fellows, R. F. HQ-SL/Brunk, W. E.	31-Atmos Sci

NSG 7157 **Rice University** 3419
Analysis and synthesis of Apollo lunar surface experiments package suprathermal ion

Period	*Obligations*	
07/01/75-04/30/79	FY78: $30,000	TOTAL: $199,715
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Freeman, J. W., Jr.	HQ-ST/Quaide, W. L. HQ-SL/French, B. M.	32-Geological Sci

NSG 7361 **Rice University** 3420
Origin of the solar system: The relationship of isotopic and chemical anomalies in meteorites Earth, Moon and planets to astrophysical models of their origin

Period	*Obligations*	
08/01/77-01/31/79	FY78: $13,097	TOTAL: $36,190
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Clayton, D. D.	HQ-SL/Quaide, W. L. HQ-SL/French, B. M.	32-Geological Sci

NSG 7362 **Rice University** 3421
Thermal history of the inner planets

Period	*Obligations*	
07/01/77-06/30/79	FY78: $18,750	TOTAL: $40,034
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Debremaecker, J. C.	HQ-SL/Quaide, W. L. HQ-SL/French, B. M.	32-Geological Sci

NSG 7386 **Rice University** 3422
Study of ion-molecule reactions of importance in planetary atmosphere

Period	*Obligations*	
09/01/77-08/31/78	FY78: $36,954	TOTAL: $36,954
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Stebbings, R. F.	HQ-SL/Donn, B. D. HQ-SL/Mitz, M. A.	31-Atmos Sci

NSG 7490 **Rice University** 3423
Thermodynamic analysis of electron laser storage

Period	*Obligations*	
09/01/78-08/31/79	FY78: $29,598	TOTAL: $29,598
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Coleson, W. B.	HQ-RR/Henry, W.	45-Elec Engr

NSG 9039 **Saint Mary's University** 3424
X-ray diffraction studies of shocked lunar analogs
Period 01/10/76-06/30/79 *Obligations* FY78: $19,800 TOTAL: $57,500
Prin. Invest. Hanss, R. E. *NASA Tech. Officer* JSC/Horz, F. *CASE Category* 32-Geological Sci

NSG 1548 **Southern Methodist University** 3425
Measurements on an improved performance wall jet control for turbulent boundary layers
Period 07/01/78-06/30/79 *Obligations* FY78: $20,000 TOTAL: $20,000
Prin. Invest. Simpson, R. L. *NASA Tech. Officer* LARC/Bushnell, D. M.; LARC/Morrisette, E. L. *CASE Category* 41-Aero Engr

NSG 2006 **Southern Methodist University** 3426
Monitoring of the Dallas/Fort Worth regional airport
Period 02/01/74-12/15/78 *Obligations* FY78: $9,040 TOTAL: $80,063
Prin. Invest. Starling, J. *NASA Tech. Officer* ARC/Tanner, T. A., Jr. *CASE Category* 79-Soc Sci, NEC

NGT 44-073-750 **Texas A&I University** 3427
Training of undergraduate students in sciences and engineering
Period 06/01/75-05/31/78 *Obligations* FY78: TOTAL: $17,500
Prin. Invest. Franke, E. A. *NASA Tech. Officer* HQ-LU/Pohly, J. G.; HQ-U/Jenkins, H. G. *CASE Category* 49-Engr, NEC

NSG 3112 **Texas A&I University** 3428
Comparison of experimental data with mathematical models for combustion chamber mixing
Period 09/01/76-02/28/78 *Obligations* FY78: TOTAL: $13,520
Prin. Invest. O'Hara, J. C. *NASA Tech. Officer* LERC/Priem, R. J. *CASE Category* 41-Aero Engr

NAS 5-20796 **Texas A&M University** 3429
ERTS follow-on investigation
Period 01/15/75-10/15/78 *Obligations* FY78: TOTAL: $151,375
Prin. Invest. Rouse, J. W., Jr. *NASA Tech. Officer* GSFC/Stonesifer, G. R. *CASE Category* 59-Life Sci, NEC

NAS 5-22966 **Texas A&M University** 3430
Nimbus-G experiment team for coastal zone color scanner
Period 02/10/76-02/10/79 *Obligations* FY78: $90,266 TOTAL: $178,266
Prin. Invest. El-Sayed, S. Z. *NASA Tech. Officer* GSFC/Hovis, W. A.; GSFC/Nelsen, E. D. *CASE Category* 41-Aero Engr

NAS 5-24383 **Texas A&M University** 3431
Applications of heat capacity mapping mission satellite data to the study of urban heating patterns
Period 01/16/78-09/30/79 *Obligations* FY78: $52,045 TOTAL: $52,045
Prin. Invest. Harlan, J. C. *NASA Tech. Officer* GSFC/Stonesifer, G. R. *CASE Category* 19-Phys Sci, NEC

NAS 5-25144 **Texas A&M University** 3432
Soil moisture determination study
Period 07/25/78-05/25/79 *Obligations* FY78: $30,000 TOTAL: $30,000
Prin. Invest. Blanchard, B. J. *NASA Tech. Officer* GSFC/Chang, A. T. *CASE Category* 39-Env Sci, NEC

NAS 6-2884 **Texas A&M University** 3433
Study of the dynamics of ocean surface current and Kuroshio circulation
Period 02/01/78-01/31/79 *Obligations* FY78: $19,975 TOTAL: $19,975
Prin. Invest. Ichiye, T. *NASA Tech. Officer* WFC/Huang, N. E.; WFC/Long, S. R. *CASE Category* 33-Oceanography

NAS 8-26379 **Texas A&M University** 3434
Development of techniques to control dislocations created during the fabrication of large scale integrated circuit alloys
Period 08/27/70-02/28/77 *Obligations* FY78: $4,195 TOTAL: $272,505
Prin. Invest. Porter, W. A. *NASA Tech. Officer* MSFC/Nowakowski, M.F.; MSFC/Holiday, A. M. *CASE Category* 45-Elec Engr

NAS 8-31773 **Texas A&M University** 3435
The relationship between severe storms and their environment
Period 01/02/76-02/28/79 *Obligations* FY78: $40,000 TOTAL: $184,983
Prin. Invest. Scoggins, J. R. *NASA Tech. Officer* MSFC/Hill, C. K.; MSFC/Vaughn, W. W. *CASE Category* 31-Atmos Sci

NAS 8-32527 **Texas A&M University** 3436
Bent crystal X-ray topography
Period 07/13/77-09/30/78 *Obligations* FY78: TOTAL: $39,954
Prin. Invest. Parker, D. L. *NASA Tech. Officer* MSFC/Nowakowski, M. F.; MSFC/Holiday, A. M. *CASE Category* 13-Physics

NAS 9-12434 **Texas A&M University** 3437
Compression of rehydratable vegetables & cereals
Period 01/19/72-01/31/79 *Obligations* FY78: $20,000 TOTAL: $160,000
Prin. Invest. Burns, E. E. *NASA Tech. Officer* JSC/Smith, M. C., Jr. *CASE Category* 59-Life Sci, NEC

NAS 9-13894 Texas A&M University 3438
Classification techniques evaluation and yield modeling for a large crop inventory project

Period	Obligations	
01/15/74-12/31/78	FY78: $58,287	TOTAL: $430,842
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Freund, R. J.	JSC/Browne, I. D.	22-Computer Science

NAS 9-13904 Texas A&M University 3439
Microwave soil moisture measurement and analysis

Period	Obligations	
02/11/74-02/28/79	FY78: $94,616	TOTAL: $399,826
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rouse, J. W., Jr.	JSC/Buras, N. T.	39-Env Sci, NEC

NAS 9-14689 Texas A&M University 3440
Application of feature selection

Period	Obligations	
06/01/75-10/31/78	FY78: $60,000	TOTAL: $206,200
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Guseman, L. F., Jr.	JSC/Browne, I. D.	22-Computer Science

NAS 9-14828 Texas A&M University 3441
Lunar sample irradiation services

Period	Obligations	
11/01/75-08/31/79	FY78: $15,000	TOTAL: $45,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Randall, J. D.	JSC/Blanchard, D. P.	39-Env Sci, NEC

NAS 9-14875 Texas A&M University 3442
Joint soil moisture experiment scatterometer data processing

Period	Obligations	
01/22/76-02/28/79	FY78: $39,900	TOTAL: $94,900
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Newton, R. R.	JSC/Demel, K. J. JSC/Baldwin, R. R.	32-Geological Sci

NAS 9-15311 Texas A&M University 3443
Investigation of microprocessor systems to be used in the development of a 4.75GHz scatterometer real-time processor

Period	Obligations	
05/11/77-11/30/78	FY78: $64,253	TOTAL: $69,253
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Newton, R. W.	JSC/Farris, G. W.	45-Elec Engr

NAS 9-15451 Texas A&M University 3444
Microwave Remote Sensing symposium workshop

Period	Obligations	
10/12/77-10/31/78	FY78: $66,513	TOTAL: $66,513
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rouse, J. W., Jr.	JSC/Matthews, R. E.	13-Physics

NAS 9-15465 Texas A&M University 3445
Rangeland resource evaluation from LANDSAT

Period	Obligations	
12/15/77-06/14/79	FY78: $83,673	TOTAL: $83,673
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Harlan, J. C.	JSC/Amsbury, D. M.	32-Geological Sci

NAS 9-15468 Texas A&M University 3446
Development of map products on state of rangelands

Period	Obligations	
12/05/77-04/30/79	FY78: $64,748	TOTAL: $64,748
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Whitehorn, N.	JSC/Amsbury, D. L.	99-Multi-Discip

NAS 9-15539 Texas A&M University 3447
Administrative support for the LACIE symposium

Period	Obligations	
05/17/78-12/31/78	FY78: $54,349	TOTAL: $54,349
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Shepard, P.	JSC/Eason, R.	99-Multi-Discip

NGL 44-001-001 Texas A&M University 3448
Interdisciplinary space oriented research in physical, life and engineering sciences

Period	Obligations	
02/01/62-01/31/81	FY78: $75,000	TOTAL: $1,915,564
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Blanchard, B. J.	HQ-ET/Vitale, J. A.	39-Env Sci, NEC

NGR 44-001-117 Texas A&M University 3449
Radiative transfer in realistic planetary atmospheres

Period	Obligations	
07/19/71-09/30/80	FY78: $44,100	TOTAL: $308,520
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Plass, G. N.	HQ-SL/Fellows, R. F. HQ-SL/Brunk, W. E.	31-Atmos Sci

NSG 1174 Texas A&M University 3450
Development of inverse transonic airfoil design methods including boundary layer and viscous interaction effects

Period	Obligations	
05/01/75-01/31/79	FY78: $19,964	TOTAL: $49,829
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Carlson, L. A.	LARC/South, J. C., Jr.	41-Aero Engr

NSG 1374 Texas A&M University 3451
Low cost avionics for the global positioning system

Period	Obligations	
01/15/77-10/14/79	FY78: $28,650	TOTAL: $46,587
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Painter, J. H. Noe, P. S. Rhyne, V. T.	LARC/Lytle, C. D. LARC/Hearn, C. P.	45-Elec Engr

NSG 1407 Texas A&M University 3452
Investigation of the aerodynamics for preventing aircraft stall and the development of technology for stall proof general aviation aircraft

Period	Obligations	
04/01/77-12/31/78	FY78: $41,040	TOTAL: $71,033
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Chevalier, H. L.	LARC/Chambers, J. R. LARC/Johnson, J. L.	41-Aero Engr

NSG 2226 Texas A&M University 3453
Applicability of reliability and survivability program-version I to model reliability and survivability characteristics of aircraft weapon systems

Period	Obligations	
05/01/77-01/31/79	FY78: $5,000	TOTAL: $11,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Foster, J. W. Phillips, D. T.	ARC/Wong, J. T. ARC/Andre, W. L.	41-Aero Engr

NSG 3201 Texas A&M University 3454
Theoretical calculations relevant to hydrogen storage

Period	Obligations	
06/15/78-06/14/79	FY78: $4,000	TOTAL: $4,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ford, A. L.	LERC/Brown, G. V.	13-Physics

NSG 5134 Texas A&M University 3455
Measurement of soil moisture trends with airborne scatterometers

Period	Obligations	
10/11/76-12/10/78	FY78: $25,000	TOTAL: $50,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Blanchard, B. J.	GSFC/Chang, A. T.	32-Geological Sci

NSG 5156 Texas A&M University 3456
Measurement of the hydrologic soil-cover complex with airborne scatterometers

Period	Obligations	
02/01/77-01/31/79	FY78: $30,100	TOTAL: $79,085
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Blanchard, B. J.	GSFC/Chang, A. T.	32-Geological Sci

NSG 5193 Texas A&M University 3457
Temporal correlations of antecendent precipitation with Nimbus-5 electrically scanning microwave radiometer brightness temperatures

Period	Obligations	
08/01/77-07/31/79	FY78: $40,438	TOTAL: $45,875
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McFarland, M. J. Blanchard, B. J.	GSFC/Schmugge, T. J.	31-Atmos Sci

NSG 5266 Texas A&M University 3458
Research on mathematical model of an orbiting microwave radiometer

Period	Obligations	
04/01/78-03/31/79	FY78: $60,302	TOTAL: $60,302
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Newton, R. W. Rouse, J. W., Jr.	GSFC/Wang, J. R.	39-Env Sci, NEC

NSG 7037 Texas A&M University 3459
The origin of the genetic code: A physical chemical model of Codon assignment

Period	Obligations	
05/07/74-05/31/79	FY78: $44,000	TOTAL: $215,975
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fendler, J. H. Nagyvary, J.	HQ-SB/Young, R. S.	12-Chemistry

NSG 7189 Texas A&M University 3460
A comparison of smooth, continuous velocity models and stepwise, layered velocity models for the lunar crust

Period	Obligations	
02/01/76-03/15/78	FY78:	TOTAL: $20,704
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gangi, A. F. Self, S. L.	HQ-SL/Goldstein, B. E.	32-Geological Sci

NSG 7370 Texas A&M University 3461
Spacecraft evidence for sulfur in the clouds of Venus

Period	Obligations	
06/01/77-11/30/78	FY78:	TOTAL: $22,854
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Young, A. T.	HQ-SL/Murphy, R. E.	32-Geological Sci

NSG 7417 Texas A&M University 3462
Velocity model of the shallow lunar crust

Period	Obligations	
03/01/78-02/28/79	FY78: $21,837	TOTAL: $21,837
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gangi, A. F.	HQ-SL/Quaide, W. L. HQ-SL/French, B. E.	32-Geological Sci

NAS 9-11162 Texas Tech University 3463
Insulated ECG electrodes

Period	Obligations	
06/29/70-01/31/79	FY78:	TOTAL: $134,892
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Portnoy, W. M.	JSC/Day, J. L.	45-Elec Engr

NSG 2137 Texas Tech University 3464
Pharmacological prevention of bone loss

Period	Obligations	
05/01/76-04/30/79	FY78: $10,000	TOTAL: $28,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kenny, A. D.	ARC/Holton, E. M.	51-Biology

NSG 7435 **Texas Tech University** 3465
Application of laser ranging and very long base interferometry data to a study of plate tectonic driving forces

Period	Obligations	
05/01/78-04/30/79	FY78: $21,178	TOTAL: $21,178
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hartman, H. B.	HQ-SB/Halstead, T. W.	51-Biology

NAS 1-9685 **University of Houston - Houston** 3466
Participation in the science planning for the Viking 1975 missions in the area of molecular analysis

Period	Obligations	
03/17/70-09/30/78	FY78: $20,605	TOTAL: $480,842
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Oro, J.	LARC/Williams, T. S., Jr.	
	LARC/Glenny, W. R.	39-Env Sci, NEC

NAS 2-9987 **University of Houston - Houston** 3467
Study of the influence of weightlessness on lignification in developing plant seedlings

Period	Obligations	
07/01/78-10/31/78	FY78: $22,695	TOTAL: $22,695
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cowles, J. R.	ARC/Tremor, J. W.	59-Life Sci, NEC

NAS 9-11676 **University of Houston - Houston** 3468
Characterization of heat transfer in nutrient materials

Period	Obligations	
04/28/71-06/30/79	FY78: $9,997	TOTAL: $89,953
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cox, J. E.	JSC/Sauer, R. L.	59-Life Sci, NEC

NAS 9-14209 **University of Houston - Houston** 3469
Study of astrophysical problems

Period	Obligations	
06/01/74-11/30/78	FY78: $35,633	TOTAL: $191,018
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sheldon, W. R.	JSC/Alexander, W. C.	11-Astronomy

NAS 9-14857 **University of Houston - Houston** 3470
Effects of gravity on contractile proteins

Period	Obligations	
12/01/75-05/31/79	FY78: $25,000	TOTAL: $75,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Henney, H. R., Jr.	JSC/Graves, R. C.	51-Biology

NAS 9-15000 **University of Houston - Houston** 3471
Development of mathematical techniques for the analysis of remote sensing data

Period	Obligations	
05/18/76-02/28/78	FY78:	TOTAL: $223,800
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Decell, H. P., Jr.	JSC/Browne, I. D.	21-Mathematics

NAS 9-15193 **University of Houston - Houston** 3472
Analysis and problem-solving of space shuttle aerodynamics and structures

Period	Obligations	
11/01/76-02/01/79	FY78: $40,000	TOTAL: $82,900
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Michalopoulos, C. O.	JSC/Eggleston, J. M.	41-Aero Engr
Wheeler, L. T.		

NAS 9-15521 **University of Houston - Houston** 3473
Man-machine analysis of translation and work tasks of Skylab films

Period	Obligations	
02/01/78-12/01/78	FY78: $10,000	TOTAL: $10,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Morrow, J. R.	JSC/Jackson, J. T.	19-Phys Sci, NEC

NAS 9-15543 **University of Houston - Houston** 3474
Development of mathematical techniques for the analysis of remote sensing data

Period	Obligations	
03/14/78-11/30/78	FY78: $57,860	TOTAL: $57,860
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Decell, H. P., Jr.	JSC/Browne, I. D.	39-Env Sci, NEC

NAS 9-15553 **University of Houston - Houston** 3475
Study of the surface physical properties of Mars

Period	Obligations	
05/18/78-10/10/78	FY78: $11,894	TOTAL: $11,894
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
King, E. A.	JSC/Morrison, D. A.	31-Atmos Sci

NAS 9-15680 **University of Houston - Houston** 3476
Conceptual design of a flight operations planning scheduling system

Period	Obligations	
09/11/78-08/31/79	FY78: $35,400	TOTAL: $35,400
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lee, W. B.	JSC/Kennedy, M. G.	49-Engr, NEC
Steinberg, E.		

NGR 44-005-002 **University of Houston - Houston** 3477
Studies in organic cosmochemistry, including consideration of compound formation under primitive earth conditions & of organic material in selected meteorites

Period	Obligations	
06/18/62-10/31/78	FY78: $80,000	TOTAL: $864,905
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Oro, J.	HQ-SB/Young, R. S.	32-Geological Sci

NGR 44-005-091 **University of Houston - Houston** 3478
Spectroscopic and photochemical study of photochromic compounds

Period	Obligations	
03/07/69-01/31/79	FY78: $50,000	TOTAL: $505,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Becker, R. S.	HQ-SB/Young, R. S.	12-Chemistry

NGR 44-005-133 **University of Houston - Houston** **3479**
Investigation of auroral disturbances

Period	*Obligations*	
03/15/71-08/31/77	FY78:	TOTAL: $319,036
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sheldon, W. R.	HQ-ST/Schmerling, E. R.	31-Atmos Sci

NGR 44-005-137 **University of Houston - Houston** **3480**
Thermomagnetic torques in gases

Period	*Obligations*	
02/17/71-09/01/78	FY78:	TOTAL: $129,200
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hildebrandt, A. F.	JSC/Kondo, Y.	13-Physics

NGT 44-005-114 **University of Houston - Houston** **3481**
Program of Faculty Space Systems Engineering Institute

Period	*Obligations*	
04/06/70-03/31/78	FY78:	TOTAL: $825,080
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Huang, C. J.	HQ-LU/Carter, C. H.	49-Engr, NEC

NGT 44-005-115 **University of Houston - Houston** **3482**
Summer faculty fellowship program in research

Period	*Obligations*	
05/06/74-03/31/79	FY78: $162,832	TOTAL: $1,114,102
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Huang, C. J.	HQ-LU/Carter, C. H.	49-Engr, NEC

NSG 1475 **University of Houston - Houston** **3483**
The large-scale coherent structure in the circular jet

Period	*Obligations*	
12/01/77-11/30/78	FY78: $35,000	TOTAL: $35,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hussain, A. K.	LARC/Maestrello, L. LARC/Seiner, J. M.	41-Aero Engr

NSG 2337 **University of Houston - Houston** **3484**
The high Reynolds number free shear layer (behind a backward facing step)

Period	*Obligations*	
09/01/78-07/01/79	FY78: $65,623	TOTAL: $65,623
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Faele Hussain, A. K.	ARC/Viegas, J. R.	47-Materials Engr

NSG 6008 **University of Houston - Houston** **3485**
Investigate ionospheric disturbances using a parachute deployed payload

Period	*Obligations*	
12/01/75-08/31/79	FY78:	TOTAL: $70,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sheldon, W. R.	WFC/Gray, J. W. WFC/Gray, J. W.	19-Phys Sci, NEC

NSG 7228 **University of Houston - Houston** **3486**
Geologic mapping of the planet Mercury

Period	*Obligations*	
04/01/76-09/30/78	FY78:	TOTAL: $27,358
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
King, E. A.	HQ-SL/Dwornik, S. E. HQ-SL/Wahmann, R.	32-Geological Sci

NSG 7300 **University of Houston - Houston** **3487**
The role cell membranes in the regulation of lignification in pine cells

Period	*Obligations*	
10/01/76-11/30/78	FY78: $29,989	TOTAL: $59,989
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hendrix, D. H.	HQ-SB/Halstead, T. W. HQ-SB/Geib, D. S.	51-Biology

NSG 7410 **University of Houston - Houston** **3488**
Wind regime of various dune types in the Southeastern California desert

Period	*Obligations*	
11/01/77-10/31/79	FY78: $18,707	TOTAL: $18,707
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Smith, R. S.	HQ-SL/Dwornik, S. E. HQ-SL/Boyce, J. M.	32-Geological Sci

NSG 7440 **University of Houston - Houston** **3489**
Evolutionary relationships in the microbial world

Period	*Obligations*	
06/01/78-05/31/79	FY78: $45,000	TOTAL: $45,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fox, G. E.	HQ-SB/Young, R. S.	51-Biology

NSG 9042 **University of Houston - Houston** **3490**
Aromatic biosynthesis in pine tissues

Period	*Obligations*	
04/01/76-05/31/79	FY78: $30,000	TOTAL: $89,800
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Coules, J. R. Scheld, H. W.	HQ-SB/Halstead, T. W. HQ-SB/Geib, D. S.	51-Biology

DEN 8 1 **University of Houston - Clear Lake** **3491**
Installation of a solar energy system

Period	*Obligations*	
06/14/78-10/01/78	FY78: $201,642	TOTAL: $201,642
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Samfield, E.	MSFC/Clark, J. H.	31-Atmos Sci

NAS 9-15642 **University of Houston - Clear Lake** **3492**
Development of quantitative exercise program for use in space flight

Period	*Obligations*	
07/17/78-07/17/79	FY78: $5,000	TOTAL: $5,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Coleman, A. E.	JSC/Sawin, C. F.	53-Other Medical

NSG 9043 **University of Houston - Clear Lake** **3493**
Cosmic ray and solar flare irradiation history of regolith crystals and agglutinates

Period	*Obligations*	
06/01/76-01/31/79	FY78: $32,000	TOTAL: $93,600
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Blanford, G. E.	JSC/Harris, J. W.	13-Physics

NSG 2077 **University of Texas - Arlington** **3494**
Large eddy structure of a turbulent boundary layer

Period	*Obligations*	
03/15/75-03/31/79	FY78:	TOTAL: $34,098
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Payne, F. R.	ARC/Rubesin, M. W.	41-Aero Engr
	ARC/Marvin, J. G.	

NAS 1-14160 **University of Texas - Austin** **3495**
Study of nonlinear propagation effects in jet noise

Period	*Obligations*	
09/15/75-01/10/78	FY78:	TOTAL: $80,813
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Blackstock, D. T.	LARC/Hilton, D. A.	41-Aero Engr
	LARC/Seiner, J. M.	

NAS 1-15164 **University of Texas - Austin** **3496**
Viking guest investigator program

Period	*Obligations*	
01/06/78-09/30/79	FY78: $15,000	TOTAL: $15,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Baker, V. R.	LARC/Spence, D. C.	31-Atmos Sci

NAS 5-22576 **University of Texas - Austin** **3497**
Communications link characterization experiment

Period	*Obligations*	
09/08/75-02/01/79	FY78: $70,000	TOTAL: $209,400
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Straiton, A. W.	GSFC/Hirschmann, E.	45-Elec Engr

NAS 5-25018 **University of Texas - Austin** **3498**
Research in identifying dominant error sources inherent in the estimation process by solving for points on the earth's surface

Period	*Obligations*	
05/17/78-01/17/79	FY78: $19,125	TOTAL: $19,125
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Tapley, B. D.	GSFC/Kahn, W. D.	19-Phys Sci, NEC
Schutz, B. E.		
Sutton, H. E.		

NAS 6-2454 **University of Texas - Austin** **3499**
GEOS-C research into solid earth dynamics

Period	*Obligations*	
03/15/74-10/31/77	FY78:	TOTAL: $90,552
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Tapley, B. D.	WFC/Stanley, H. R.	32-Geological Sci
Schutz, B. E.	WFC/Rossi, L. C.	

NAS 8-31459 **University of Texas - Austin** **3500**
Analysis of ultraviolet stellar spectra obtained with Skylab experiment S-019

Period	*Obligations*	
06/30/75-10/31/78	FY78: $50,821	TOTAL: $391,821
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Henize, K. G.	MSFC/Snoddy, W. C.	11-Astronomy
Wray, J. D.		

NAS 8-32905 **University of Texas - Austin** **3501**
Scientific investigation in support of the space telescope project

Period	*Obligations*	
02/15/78-02/15/84	FY78: $285,400	TOTAL: $285,400
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lambert, D. L.	MSFC/O'Dell, C. R.	11-Astronomy

NAS 8-32906 **University of Texas - Austin** **3502**
Scientific investigations in support of the space telescope project, to assure that the space telescope will perform astrometric functions

Period	*Obligations*	
02/01/78-02/23/84	FY78: $300,000	TOTAL: $300,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Jefferys, W. H.	MSFC/O'Dell, C. R.	11-Astronomy

NAS 9-13680 **University of Texas - Austin** **3503**
Assessment of real gas effects on the extrapolation of shuttle flow field phenomena to flight conditions

Period	*Obligations*	
09/27/73-03/15/79	FY78: $49,509	TOTAL: $156,985
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wagner, J. B.	JSC/Goodrich, W. D.	41-Aero Engr

NAS 9-14491 **University of Texas - Austin** **3504**
Adsorption pumping cryogenic refrigeration study

Period	*Obligations*	
02/10/75-12/31/78	FY78: $99,000	TOTAL: $277,200
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hartwig, W. H.	JSC/Richard, R. R.	49-Engr, NEC
Steinfink, H.	JSC/Nuss, R. W.	

NAS 9-14581 **University of Texas - Austin** **3505**
Apollo passive seismic experiment

Period	*Obligations*	
02/01/75-01/31/78	FY78:	TOTAL: $682,808
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Latham, G. V.	JSC/Eichelman, W. F.	13-Physics

NAS 9-14810 **University of Texas - Austin** **3506**
Apollo lunar surface experiment package data processing

Period	*Obligations*	
10/01/75-05/31/78	FY78:	TOTAL: $547,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Latham, G. V.	JSC/Eichelman, W. F.	13-Physics

NAS 9-15093 **University of Texas - Austin** **3507**
Data analysis and associated data storage unit for interferometer system

Period	*Obligations*	
08/01/76-01/31/78	FY78:	TOTAL: $15,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Barnes, T.	JSC/Potter, A. E.	11-Astronomy

NAS 9-15217 **University of Texas - Austin** **3508**
Imaging radar math model and airborne imaging radar data collecting system

Period	*Obligations*	
12/15/76-12/31/78	FY78:	TOTAL: $230,969
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Tucker, A. J.	JSC/Pels, G. F.	49-Engr, NEC

NAS 9-15401 **University of Texas - Austin** **3509**
Shuttle imaging radar flight systems/antenna tradeoff and evaluation study

Period	*Obligations*	
08/01/77-03/01/79	FY78: $17,000	TOTAL: $66,800
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Crow, G. L.	JSC/Nitschke, H. A.	41-Aero Engr

NAS 9-15482 **University of Texas - Austin** **3510**
Ballistic signature recordings with photographic films

Period	*Obligations*	
01/01/78-07/01/79	FY78: $12,600	TOTAL: $12,600
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Friedrich, O. M.	JSC/Arndt, G. D.	45-Elec Engr

NAS 9-15567 **University of Texas - Austin** **3511**
Interaction of numerical and dynamical stability

Period	*Obligations*	
04/26/78-02/26/79	FY78: $7,000	TOTAL: $7,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Szebekely, V. G.	JSC/Bond, V.	12-Chemistry

NASW 2974 **University of Texas - Austin** **3512**
Design, development, construction and operational testing of a completely operational transportable lunar laser tracking station capable of attaining a three century range accuracy

Period	*Obligations*	
07/16/76-05/31/78	FY78:	TOTAL: $1,351,631
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Silverberg, E. C.	HQ-SM/Shirey, W.H.	19-Phys Sci, NEC

NGL 44-012-006 **University of Texas - Austin** **3513**
Research on millimeter wavelength radiation from solar bodies

Period	*Obligations*	
04/29/63-03/31/80	FY78:	TOTAL: $1,466,333
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wilson, W. J.	HQ-SL/Brunk, W. E. HQ-SL/Quaide, W. L.	11-Astronomy

NGL 44-012-055 **University of Texas - Austin** **3514**
Polarization and time structure of Jovian decametric radiation and the structure of interplanetary plasma

Period	*Obligations*	
05/25/66-04/30/80	FY78: $93,486	TOTAL: $1,022,072
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Douglas, J. N.	HQ-SL/Brunk, W. E. HQ-SL/Quaide, W. L.	11-Astronomy

NGR 44-012-152 **University of Texas - Austin** **3515**
A program of planetary studies

Period	*Obligations*	
06/25/69-08/30/78	FY78: $433,713	TOTAL: $3,249,198
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Trafton, L. M.	HQ-SL/Brunk, W. E. HQ-SL/Quaide, W. L.	11-Astronomy

NGR 44-012-165 **University of Texas - Austin** **3516**
Continuation of lunar laser ranging experiments at McDonald Observatory

Period	*Obligations*	
10/11/69-08/31/78	FY78: $379,962	TOTAL: $2,929,424
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Silverberg, E. C.	HQ-SL/Flinn, E. A.	32-Geological Sci

NGR 44-012-209 **University of Texas - Austin** **3517**
Study of optical properties of X-ray source

Period	*Obligations*	
05/26/71-08/31/77	FY78:	TOTAL: $58,838
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
VanDenBout, P. A.	HQ-SC/Rosendhal, J. D.	11-Astronomy

NGR 44-012-225 **University of Texas - Austin** **3518**
Stable carbon isotope ratio variations in blue-green algae as a function of growth conditions

Period	*Obligations*	
06/20/72-01/31/77	FY78:	TOTAL: $55,916
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Parker, P. L. VanBaalen, C.	HQ-SL/Young, R. S.	32-Geological Sci

NGR 44-012-258 **University of Texas - Austin** **3519**
Stark broadening of heavy neutral atoms and ions

Period	*Obligations*	
00/00/00-12/31/76	FY78:	TOTAL: $27,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bengtson, P. D.	HQ-ST/Timothy, A. F.	11-Astronomy

NGR 44-012-282 **University of Texas - Austin** **3520**
Outer planet satellite studies

Period	*Obligations*	
09/01/73-07/31/79	FY78: $42,261	TOTAL: $194,968
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mulholland, J. D.	HQ-SL/Brunk, W. E. HQ-SL/Murphy, R. E.	11-Astronomy

NGR 44-012-283 **University of Texas - Austin** **3521**
Precision orbit determination for near-earth satellites

Period	*Obligations*	
01/14/74-04/30/79	FY78: $30,000	TOTAL: $144,410
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Tapley, B. D.	GSFC/Smith, D. E.	32-Geological Sci
Schutz, B. E.		

NSG 1440 **University of Texas - Austin** **3522**
Accelerating convergence of collocation methods

Period	*Obligations*	
09/01/77-08/31/79	FY78: $13,809	TOTAL: $27,618
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Daniel, J. W.	LARC/Shoosmith, J. N.	21-Mathematics

NSG 1446 **University of Texas - Austin** **3523**
Research into a data management system for scientific/engineering applications

Period	*Obligations*	
09/01/77-08/31/79	FY78: $67,890	TOTAL: $77,890
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Browne, J. C.	LARC/Shipman, F. S.	22-Computer Science
	LARC/Shoosmith, J. N.	

NSG 1479 **University of Texas - Austin** **3524**
Verification/validation of space shuttle flight computer programing language (HAL/S)

Period	*Obligations*	
01/01/78-06/30/79	FY78: $51,747	TOTAL: $51,747
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Browne, J. C.	LARC/Will, R. W.	22-Computer Science
Good, D. I.	LARC/Foudriat, E. C.	

NSG 1544 **University of Texas - Austin** **3525**
Numerical software development

Period	*Obligations*	
06/01/78-05/31/79	FY78: $16,046	TOTAL: $16,046
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Cline, A. K.	LARC/Schiess, J. R.	22-Computer Science

NSG 2065 **University of Texas - Austin** **3526**
Antecedents of achievement and creativity

Period	*Obligations*	
02/01/75-11/30/78	FY78: $83,476	TOTAL: $216,186
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Helmreich, R. L.	ARC/Patton, R. M.	69-Psych, NEC

NSG 2310 **University of Texas - Austin** **3527**
Penetrator ground coupling experiment

Period	*Obligations*	
04/01/78-12/31/78	FY78: $13,388	TOTAL: $13,388
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Nakamura, Y.	ARC/Blanchard, M. B.	
Latham, G. V.	ARC/Murphy, J. P.	19-Phys Sci, NEC

NSG 2338 **University of Texas - Austin** **3528**
Finite elements and Navier-Stokes' problems

Period	*Obligations*	
10/01/78-10/01/79	FY78: $5,329	TOTAL: $5,329
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Carey, G. F.	ARC/Ballhaus, W. F.	41-Aero Engr
	ARC/Holst, T. L.	

NSG 3089 **University of Texas - Austin** **3529**
Plasma fluctuation diagnostic tool for the Bumpy Torus experiment

Period	*Obligations*	
11/17/75-12/31/78	FY78: $20,000	TOTAL: $80,000
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Powers, E. J.	LERC/Moeckel, W. E.	45-Elec Engr
	LERC/Roth, J. R.	

NSG 3190 **University of Texas - Austin** **3530**
Preparation, characterization, physical testing and performance of fluorocarbon membranes and separators

Period	*Obligations*	
06/01/78-05/31/79	FY78: $35,000	TOTAL: $35,000
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Lagow, R. J.	LERC/Sheibley, D. W.	52-Clinical Med
Dumitru, E. T.		

NSG 3198 **University of Texas - Austin** **3531**
Acoustic properties of duct lining materials

Period	*Obligations*	
07/01/78-06/30/81	FY78: $60,000	TOTAL: $60,000
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Blackstock, D. T.	LERC/Rice, E. J.	13-Physics
Panton, R. L.	LERC/Baumeister, K. J.	
Perreira, N. D.		

NSG 5005 **University of Texas - Austin** **3532**
Observations of emission lines in M supergiants

Period	*Obligations*	
05/01/74-12/31/78	FY78:	TOTAL: $20,778
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Lambert, D. L.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5154 **University of Texas - Austin** **3533**
Research of autonomous satellite navigational methods using global positioning satellite system

Period	*Obligations*	
03/01/77-05/31/79	FY78: $30,000	TOTAL: $76,843
Prin. Invest.	***NASA Tech. Officer***	***CASE Category***
Tapley, B. D.	GSFC/Fuchs, A. J.	21-Mathematics
Schutz, B. E.	GSFC/Wooden, W. H., II	

NSG 5167 University of Texas - Austin 3534
Copernicus observations of stellar winds in early B-type stars
Period: 03/14/77-09/13/78 Obligations: FY78: TOTAL: $3,418
Prin. Invest.: Smith, M. A.
NASA Tech. Officer: GSFC/Kupperian, J. E., Jr.
CASE Category: 11-Astronomy

NSG 5233 University of Texas - Austin 3535
Ultraviolet spectroscopy of X-ray emitting binary systems and ultraviolet observations of interstellar molecules
Period: 02/19/78-02/18/79 Obligations: FY78: $12,906 TOTAL: $12,906
Prin. Invest.: VanDenBout, P. A.
NASA Tech. Officer: GSFC/Boggess, A.; GSFC/West, D. K.
CASE Category: 11-Astronomy

NSG 5236 University of Texas - Austin 3536
Copernicus satellite observations of Raman scattered Lyman-alpha radiation
Period: 02/19/78-02/18/79 Obligations: FY78: $1,570 TOTAL: $1,570
Prin. Invest.: Trafton, L. M.
NASA Tech. Officer: GSFC/Kupperian, J. E., Jr.
CASE Category: 11-Astronomy

NSG 7159 University of Texas - Austin 3537
Preliminary geophysical and geological site survey of the region of the McDonald Observatory
Period: 09/08/75-12/31/78 Obligations: FY78: $100,795 TOTAL: $289,057
Prin. Invest.: Dorman, J. H.
NASA Tech. Officer: HQ-ER/Flinn, E. A.
CASE Category: 19-Phys Sci, NEC

NSG 7162 University of Texas - Austin 3538
Lunar laser data identification and management
Period: 09/01/75-08/31/78 Obligations: FY78: $84,088 TOTAL: $223,203
Prin. Invest.: Shelus, P. J.
NASA Tech. Officer: HQ-ER/Flinn, E. A.
CASE Category: 19-Phys Sci, NEC

NSG 7232 University of Texas - Austin 3539
Astrophysics of supermassive accretion disks
Period: 05/01/76-04/30/79 Obligations: FY78: $23,712 TOTAL: $54,088
Prin. Invest.: Shield, G. A.; Wheeler, J. C.
NASA Tech. Officer: HQ-SC/Roman, N. G.; HQ-SC/Opp, A. G.
CASE Category: 11-Astronomy

NSG 7250 University of Texas - Austin 3540
Late cenozoic tectonic history in the region of the McDonald Observatory, Trans-Pecos, Texas
Period: 07/01/76-09/30/77 Obligations: FY78: TOTAL: $18,962
Prin. Invest.: Muehlberger, W. R.
NASA Tech. Officer: HQ-SL/Smith, M. J.; HQ-SL/Flinn, E. A.
CASE Category: 32-Geological Sci

NSG 7326 University of Texas - Austin 3541
Origin of channels on Mars
Period: 01/01/77-12/31/79 Obligations: FY78: $111,314 TOTAL: $121,440
Prin. Invest.: Baker, V. R.
NASA Tech. Officer: HQ-SL/Dwornik, S. E.; HQ-SL/Boyce, J. M.
CASE Category: 32-Geological Sci

NSG 7347 University of Texas - Austin 3542
Atomic line strengths and Stark broadening for selected compounds
Period: 06/01/77-09/30/78 Obligations: FY78: TOTAL: $6,000
Prin. Invest.: Bengtson, R. D.
NASA Tech. Officer: HQ-SC/Rosendhal, J. D.; HQ-SC/Roman, N. G.
CASE Category: 11-Astronomy

NSG 7363 University of Texas - Austin 3543
Lunar tectonics through space and time
Period: 07/01/77-01/31/79 Obligations: FY78: TOTAL: $50,509
Prin. Invest.: Muehlberger, W. R.
NASA Tech. Officer: HQ-SL/Goldstein, B. E.; HQ-SL/Quaide, W. L.
CASE Category: 32-Geological Sci

NSG 7371 University of Texas - Austin 3544
Analysis of ultraviolet stellar spectra obtained with Skylab experiment S-019
Period: 08/01/77-12/31/78 Obligations: FY78: $95,000 TOTAL: $95,000
Prin. Invest.: Henize, K. G.
NASA Tech. Officer: HQ-SC/Roman, N. G.; HQ-SC/Rosendhal, J. D.
CASE Category: 11-Astronomy

NSG 7381 University of Texas - Austin 3545
Program of 1-5 micron photometry of infrared sources embedded in molecular clouds
Period: 09/01/77-08/31/78 Obligations: FY78: $12,433 TOTAL: $12,433
Prin. Invest.: Evans, N. J., II
NASA Tech. Officer: HQ-SC/Boggess, N. W.; HQ-SC/Roman, N. G.
CASE Category: 11-Astronomy

NSG 7408 University of Texas - Austin 3546
Orbital theories of outer planet satellites
Period: 12/01/77-11/30/79 Obligations: FY78: $20,143 TOTAL: $20,143
Prin. Invest.: Jefferys, W. H.
NASA Tech. Officer: HQ-SL/Brunk, W. E.; HQ-SL/Quaide, W. L.
CASE Category: 11-Astronomy

NSG 9021 **University of Texas - Austin** **3547**
Origin of magnetization in lunar breccias and its bearing on their formation

Period	*Obligations*	
02/01/75-01/31/79	FY78: $23,700	TOTAL: $108,225
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gose, W. A.	JSC/Harris, J. W.	32-Geological Sci

NAS 2-9485 **University of Texas - Dallas** **3548**
Pioneer/Venus data analysis

Period	*Obligations*	
06/16/77-09/30/78	FY78: $66,221	TOTAL: $86,221
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hoffman, J. H.	ARC/Hall, C. F.	31-Atmos Sci

NAS 5-11406 **University of Texas - Dallas** **3549**
Atmosphere Explorer magnetic ion mass spectrometer

Period	*Obligations*	
04/06/71-09/30/79	FY78: $234,000	TOTAL: $1,492,523
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hoffman, J. H.	GSFC/Spencer, N. W.	31-Atmos Sci

NAS 5-11407 **University of Texas - Dallas** **3550**
Planar ion trap experiment

Period	*Obligations*	
04/06/71-09/30/79	FY78: $223,000	TOTAL: $1,665,079
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hanson, W. B.	GSFC/Spencer, N. W.	31-Atmos Sci

NAS 5-24297 **University of Texas - Dallas** **3551**
Ion drift meter for the dynamic Explorer

Period	*Obligations*	
07/26/77-02/28/81	FY78: $151,277	TOTAL: $151,277
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Heelis, R. A.	GSFC/Fellerman, K. D.	13-Physics
Hanson, W. B.	GSFC/Lidston, J. M.	

NAS 5-24298 **University of Texas - Dallas** **3552**
Retarding potential analyzer for the dynamic Explorer

Period	*Obligations*	
07/26/77-02/28/81	FY78: $172,704	TOTAL: $172,704
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hanson, W. B.	GSFC/Fellerman, K. D.	13-Physics
Heelis, R. A.	GSFC/Lidston, J. M.	

NAS 5-24299 **University of Texas - Dallas** **3553**
Low altitude plasma instrument for Dynamics Explorer (DE)

Period	*Obligations*	
11/21/77-05/28/81	FY78: $273,384	TOTAL: $273,384
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Winningham, J. D.	GSFC/Fellerman, K. D.	13-Physics
	GSFC/Lidston, J. M.	

NAS 5-25310 **University of Texas - Dallas** **3554**
Ion velocity instrument for San Marco spacecraft

Period	*Obligations*	
09/18/78-05/30/82	FY78: $37,000	TOTAL: $37,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hanson, W. B.	GSFC/Caporale, A. J.	11-Astronomy

NAS 8-31775 **University of Texas - Dallas** **3555**
Study of ATS 6 and OGO 5 data analysis

Period	*Obligations*	
03/18/76-02/28/79	FY78: $31,849	TOTAL: $55,769
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hanson, W. B.	MSFC/Chappell, C. R.	
Hoffman, J. H.	MSFC/Fields, S. A.	19-Phys Sci, NEC

NAS 8-32689 **University of Texas - Dallas** **3556**
Technology demonstration measurement for the molecular wake shield

Period	*Obligations*	
05/19/78-05/18/79	FY78: $29,969	TOTAL: $29,969
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hoffman, J. H.	MSFC/Oran, W. A.	31-Atmos Sci
Hodges, R. R., Jr.	MSFC/Thomas, P. E.	
Duerksen, K.		

NAS 8-32831 **University of Texas - Dallas** **3557**
Retarding ion mass spectrometer for dynamics Explorer

Period	*Obligations*	
01/17/78-05/31/81	FY78: $260,612	TOTAL: $260,612
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hanson, W. B.	MSFC/Chappell, C. R.	13-Physics
Hoffman, J. H.	MSFC/Fields, S. A.	

NGL 44-004-026 **University of Texas - Dallas** **3558**
Investigations into the mechanism and rates of atmospheric mixing in the lower thermosphere

Period	*Obligations*	
05/05/65-03/31/81	FY78: $164,334	TOTAL: $2,338,085
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Johnson, F. S.	HQ-SL/Murphy, R. E.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	

NGL 44-004-130 **University of Texas - Dallas** **3559**
Selected studies in the space sciences

Period	*Obligations*	
03/17/72-03/31/81	FY78:	TOTAL: $1,300,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Johnson, F. S.	HQ-LU/Carter, C. H.	99-Multi-Discip

NGR 44-004-030 **University of Texas - Dallas** **3560**
Study of electron collision frequency under ionospheric conditions

Period	*Obligations*	
05/05/65-12/31/76	FY78:	TOTAL: $580,765
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Heikkila, W. J.	HQ-ST/Cauffman, D. P.	13-Physics
	HQ-ST/Schmerling, E. R.	

NGR 44-004-120 **University of Texas - Dallas** **3561**
Rocket probes for the upper F-region

Period	*Obligations*	
02/09/71-01/31/79	FY78: $90,000	TOTAL: $985,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hanson, W. B.	HQ-ST/King, J. H.	31-Atmos Sci
	HQ-ST/Schmerling, E. R.	

NGR 44-004-124 **University of Texas - Dallas** **3562**
Rocket investigation of auroral zone disturbances

Period	*Obligations*	
08/10/71-08/31/79	FY78: $125,469	TOTAL: $1,055,021
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Winningham, J. D.	GSFC/Bissell, E. E.	13-Physics
Heikkila, W. J.	HQ-ST/Schmerling, E. E.	
Eaker, N.		

NSG 5085 **University of Texas - Dallas** **3563**
Particle spectrometer on board ISIS-2

Period	*Obligations*	
11/01/75-12/31/79	FY78: $30,000	TOTAL: $125,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Heikkik, W. J.	GSFC/Brace, L. H.	31-Atmos Sci
Winningham, J. D.		

NSG 5087 **University of Texas - Dallas** **3564**
Ion composition research on ISIS-2

Period	*Obligations*	
12/01/75-12/31/78	FY78: $30,000	TOTAL: $85,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hoffman, J. H.	GSFC/Brace, L. H.	31-Atmos Sci

NSG 5280 **University of Texas - Dallas** **3565**
Electrodynamic coupling in the ionosphere magnetosphere system

Period	*Obligations*	
07/01/78-06/31/79	FY78: $26,567	TOTAL: $26,567
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Klumpar, D. M.	GSFC/Spencer, N. W.	31-Atmos Sci
Burrows, J. R.		
Wallis, D. D.		

NSG 6012 **University of Texas - Dallas** **3566**
Rocket/satellite program in aeronomy

Period	*Obligations*	
06/27/76-03/22/78	FY78:	TOTAL: $110,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Christensen, A. B.	WFC/Ballance, C. W., Jr.	
	WFC/Gray, J. W.	19-Phys Sci, NEC

NSG 6023 **University of Texas - Dallas** **3567**
A rocket program in aeronomy

Period	*Obligations*	
02/01/78-01/31/79	FY78: $72,967	TOTAL: $72,967
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Christensen, A. B.	WFC/Gray, J. W.	19-Phys Sci, NEC
	WFC/Pless, R. H.	

NSG 7034 **University of Texas - Dallas** **3568**
Investigation of the daytime lunar atmosphere for lunar synthesis program

Period	*Obligations*	
04/01/74-03/31/79	FY78: $48,709	TOTAL: $230,640
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hodges, R. R., Jr.	HQ-SL/Quaide, W. L.	31-Atmos Sci
	HQ-SL/French, B. E.	

NSG 1316 **University of Texas - El Paso** **3569**
ESR studies of viscous liquid crystals: Electric field effects

Period	*Obligations*	
07/01/76-10/31/78	FY78: $29,000	TOTAL: $78,740
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Eastman, M. P.	LARC/Breckenridge, R. A.	13-Physics
Bruno, G. V.	LARC/Robertson, J. B.	
Lawson, J. O.		

NSG 3146 **University of Texas - El Paso** **3570**
Size effect studies of thin metal films

Period	*Obligations*	
05/02/77-08/31/79	FY78: $29,997	TOTAL: $54,993
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Brient, S. J.	LERC/Brandhorst, H. W., Jr.	
Roser, W. R.		47-Materials Engr

NSG 9062 **University of Texas - El Paso** **3571**
Occurrence and mineral chemistry of high pressure phases

Period	*Obligations*	
06/01/78-05/31/79	FY78: $25,374	TOTAL: $25,374
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hoffer, J. M.	JSC/Duke, M.	12-Chemistry

NAS 9-14641 **Univ of Texas Medical Branch - Galveston** **3572**
Analysis of spontaneous vestibular primary afferent discharge following application of drugs

Period	*Obligations*	
05/01/75-03/31/79	FY78: $35,000	TOTAL: $109,973
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Correia, M. J.	JSC/Reschke, M. F.	69-Psych, NEC

NAS 9-15565 **Univ of Texas Medical Branch - Galveston** **3573**
Micro assay for catecholamine concentration in body fluids

Period	*Obligations*	
03/27/78-03/31/79	FY78: $7,500	TOTAL: $7,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ziegler, M. G.	JSC/Leach, C. S.	59-Life Sci, NEC

NSG 7418 **Univ of Texas Medical Branch - Galveston** **3574**
Lunar seismic data analysis

Period	*Obligations*	
02/01/78-01/31/79	FY78: $289,378	TOTAL: $289,378
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Makamura, Y.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. E.	

TEXAS (Continued)

NSG 9026 **University of Texas Health Center - Dallas** 3575
Cardiovascular effect of variations in habitual levels of physical activity

Period 03/01/75-03/31/79 *Obligations* FY78: $35,200 TOTAL: $207,400
Prin. Invest. Blomquist, C. G.; Mitchell, J. H.
NASA Tech. Officer JSC/Hull, W. E.
CASE Category 52-Clinical Med

NSG 9049 **Univ of Texas Health Sci Ctr-San Antonio** 3576
Trace elements in planetary material by activation analysis

Period 02/01/77-01/31/78 *Obligations* FY78: $62,100 TOTAL: $62,100
Prin. Invest. Morgan, J. W.
NASA Tech. Officer JSC/Harris, J. W.
CASE Category 13-Physics

NAS 9-15388 **Univ of Texas-Health Science Center** 3577
Biochemical adaptation of antigravity muscle fibers to disuse atrophy

Period 08/01/77-07/31/79 *Obligations* FY78: $28,600 TOTAL: $56,600
Prin. Invest. Booth, F.
NASA Tech. Officer JSC/Rambaut, P. C.
CASE Category 51-Biology

NAS 8-32584 **University of Texas - San Antonio** 3578
Atmosphere Explorer data analysis and electrodynamics Explorer instrument development

Period 06/15/77-07/28/79 *Obligations* FY78: $8,500 TOTAL: $28,423
Prin. Invest. Burch, J. L.
NASA Tech. Officer MSFC/Chappell, C. R.; MSFC/Thomas, P. E.
CASE Category 31-Atmos Sci

NSG 5214 **University of Texas - San Antonio** 3579
Research of solar wind and magnetospheric electric fields and plasmas

Period 10/01/77-11/30/78 *Obligations* FY78: TOTAL: $34,000
Prin. Invest. Burch, J. L.
NASA Tech. Officer GSFC/Spencer, N. W.
CASE Category 13-Physics

UTAH

NAS 2-7358 **Brigham Young University** 3580
Analysis of Pioneer F & G solar terrestrial relationship data

Period 00/00/00-09/30/77 *Obligations* FY78: $1,400 TOTAL: $47,400
Prin. Invest. Jones, D. E.
NASA Tech. Officer ARC/Hall, C. F.; ARC/Porter, D. L.
CASE Category 13-Physics

NAS 1-12705 **University of Utah** 3581
Science planning for the Viking 1975 missions in the area of physical properties

Period 01/14/74-03/31/77 *Obligations* FY78: $19,500 TOTAL: $231,189
Prin. Invest. Shorthill, R. W.
NASA Tech. Officer LARC/Williams, T. S., Jr.; LARC/Glenny, W. R.
CASE Category 19-Phys Sci, NEC

NAS 2-9950 **University of Utah** 3582
A study of flammability screening tests of resins

Period 05/01/78-06/14/79 *Obligations* FY78: $59,337 TOTAL: $59,337
Prin. Invest. Hughes, B. M.; Sosin, A.
NASA Tech. Officer ARC/Kourtides, D. A.
CASE Category 43-Chem Engr

NAS 2-10064 **University of Utah** 3583
Manufacture of DPFC-DMS polymer in the SKG range and study

Period 09/27/78-10/01/79 *Obligations* FY78: $74,200 TOTAL: $74,200
Prin. Invest. Hughes, M.
NASA Tech. Officer ARC/Kourtides, D.A.
CASE Category 47-Materials Engr

NAS 6-2498 **University of Utah** 3584
Upper atmospheric physical and dynamic processes

Period 04/26/74-10/25/78 *Obligations* FY78: $31,851 TOTAL: $110,860
Prin. Invest. Kao, S. K.
NASA Tech. Officer WFC/Duke, J. R.
CASE Category 31-Atmos Sci

NAS 6-2627 **University of Utah** 3585
Rocketsonde data processing and participation in the meteorological rocket/Nimbus satellite data comparison project

Period 03/21/75-06/30/79 *Obligations* FY78: $48,967 TOTAL: $195,232
Prin. Invest. Staffanson, F. L.
NASA Tech. Officer WFC/Duke, J. R.; WFC/Schmidlin, F. J.
CASE Category 31-Atmos Sci

NAS 8-30253 **University of Utah** 3586
Preparation and investigation of methacrylate hydrogels for zeta potential control

Period 11/15/73-12/14/76 *Obligations* FY78: TOTAL: $99,819
Prin. Invest. Andrade, J. D.
NASA Tech. Officer MSFC/Patterson, W. J.; MSFC/Allen, R. E.
CASE Category 12-Chemistry

NASW 2967 **University of Utah** 3587
Construction and testing of rotating Sagnac interferometer

Period 09/28/76-09/20/77 *Obligations* FY78: TOTAL: $39,996
Prin. Invest. Vali, V.
NASA Tech. Officer HQ-RR/Randolph, L. P.; JPL/Goss, W.
CASE Category 13-Physics

NGR 45-003-108 University of Utah 3588
Applications of computer speech recognition in flight management
Period: 11/01/73-09/30/78 Obligations: FY78: $162,718 TOTAL: $251,022
Prin. Invest.: Plummer, R. P. NASA Tech. Officer: ARC/Wempe, T. E. CASE Category: 45-Elec Engr

NSG 1313 University of Utah 3589
Innovative concepts in large area space structures
Period: 07/01/76-03/31/79 Obligations: FY78: TOTAL: $32,463
Prin. Invest.: Resch, R. D. NASA Tech. Officer: LARC/Card, M. F.; LARC/Mikulas, M. M., Jr. CASE Category: 49-Engr, NEC

NSG 1534 University of Utah 3590
Fluid dynamics of crystallization from vapors
Period: 06/01/78-05/31/79 Obligations: FY78: $85,950 TOTAL: $85,950
Prin. Invest.: Rosenberger, F. E. NASA Tech. Officer: LARC/Fripp, A. L.; LARC/Crouch, R. K. CASE Category: 47-Materials Engr

NSG 7226 University of Utah 3591
Identifying environmental features for land management decisions
Period: 08/01/76-07/31/80 Obligations: FY78: TOTAL: $300,000
Prin. Invest.: Ridd, M. K. NASA Tech. Officer: HQ-ET/Vitale, J. A. CASE Category: 39-Env Sci, NEC

NSG 7425 University of Utah 3592
Infrared map in the vicinity of the crater Plato
Period: 04/01/78-03/31/79 Obligations: FY78: $13,070 TOTAL: $13,070
Prin. Invest.: Shorthill, R. W. NASA Tech. Officer: HQ-SL/Quaide, W. L.; HQ-SL/French, B. E. CASE Category: 32-Geological Sci

NAS 2-9557 Utah State University 3593
Liquid phase ozone in Freon gas
Period: 04/01/77-03/31/79 Obligations: FY78: $1,901 TOTAL: $7,288
Prin. Invest.: Jeppesen, H. NASA Tech. Officer: ARC/Lowenstein, M. CASE Category: 31-Atmos Sci

NAS 5-24455 Utah State University 3594
Investigations of Vehicle Charging And Potential (VCAP) on orbital flight test four experiment
Period: 03/01/78-12/31/80 Obligations: FY78: $438,000 TOTAL: $438,000
Prin. Invest.: Banks, P. M.; Raitt, W. J. NASA Tech. Officer: GSFC/Stouffer, C. G. CASE Category: 13-Physics

NAS 8-32636 Utah State University 3595
Large spacecraft interaction with ambient environment at geosynchronous earth orbit charging
Period: 09/20/77-05/31/79 Obligations: FY78: $44,864 TOTAL: $59,864
Prin. Invest.: Raitt, W. J. NASA Tech. Officer: MSFC/Chappell, C. R.; MSFC/Baugher, C. R. CASE Category: 31-Atmos Sci

NAS 9-14871 Utah State University 3596
Higher plant response to elevated ultraviolet irradiance
Period: 10/08/75-12/31/78 Obligations: FY78: $100,000 TOTAL: $280,000
Prin. Invest.: Caldwell, M. M. NASA Tech. Officer: JSC/Nachtwey, D. S. CASE Category: 51-Biology

NSG 5215 Utah State University 3597
Studies of high latitude ion dynamics
Period: 10/01/77-03/31/79 Obligations: FY78: $22,000 TOTAL: $22,000
Prin. Invest.: StMaurice, J. P.; Baker, K. D.; Raitt, W. J. NASA Tech. Officer: GSFC/Spencer, N. W. CASE Category: 13-Physics

NSG 5216 Utah State University 3598
Investigation of electric fields in the vicinity of plasmapause mid-latitude trough and polar cleft
Period: 10/01/77-03/31/79 Obligations: FY78: $21,000 TOTAL: $21,000
Prin. Invest.: Foster, J. C.; Doupnik, J. R. NASA Tech. Officer: GSFC/Spencer, N. W. CASE Category: 13-Physics

NSG 7038 Utah State University 3599
The diagenesis of geologically important organic matter and amino acids under simulated natural conditions
Period: 06/01/74-05/31/79 Obligations: FY78: $48,000 TOTAL: $263,352
Prin. Invest.: Smith, G. G. NASA Tech. Officer: HQ-SB/Young, R. S. CASE Category: 32-Geological Sci

NSG 7206 Utah State University 3600
Mass spectrometric study of chlorinated species by negative surface ionization
Period: 03/15/76-07/31/78 Obligations: FY78: TOTAL: $52,396
Prin. Invest.: Moore, W. M. NASA Tech. Officer: HQ-ST/Tilford, S. G.; HQ-ST/Simon, N. K. CASE Category: 12-Chemistry

NSG 7210 Utah State University 3601
Stratospheric monitoring with longterm balloon flights
Period: 03/01/76-02/28/79 Obligations: FY78: $174,072 TOTAL: $481,189
Prin. Invest.: Baker, K. D.; Williamson, P. R. NASA Tech. Officer: HQ-ST/Tilford, S. G. CASE Category: 31-Atmos Sci

NSG 7289 **Utah State University** 3602
Study of the dynamics of atmosphere-ionosphere magnetosphere interactions

Period	*Obligations*	
07/01/76-06/30/79	FY78: $178,686	TOTAL: $258,686
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Banks, P. M.	HQ-ST/Kaiser, M. L. HQ-ST/Schmerling, E. R.	31-Atmos Sci

NSG 7388 **Utah State University** 3603
Method of inferring mesoscale mixing phenomenon

Period	*Obligations*	
09/01/77-02/28/78	FY78: $19,880	TOTAL: $19,880
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Megill, L. R.	HQ-ST/Tilford, S. G. HQ-ST/Simon, N. K.	31-Atmos Sci

VERMONT

NSG 5198 **Middlebury College** 3604
Investigations of X-ray emission from Supernova remnants

Period	*Obligations*	
08/01/77-01/31/79	FY78:	TOTAL: $14,980
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Winkler, P. F.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 7453 **University of Vermont** 3605
Development of a remote sensing applications program in Vermont

Period	*Obligations*	
06/01/78-05/31/81	FY78: $200,000	TOTAL: $200,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
John, H. H.	HQ-ET/Vitale, J. A.	32-Geological Sci

VIRGINIA

NAS 1-14034 **Christopher Newport College** 3606
Quality control checks for VGH records

Period	*Obligations*	
07/01/75-09/30/78	FY78:	TOTAL: $29,748
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Roby, A. B.	LARC/Morris, G. J. LARC/Jewell, J. W., Jr.	41-Aero Engr

NSG 1429 **Christopher Newport College** 3607
An investigation of the edge-tone effect

Period	*Obligations*	
07/01/77-02/28/79	FY78:	TOTAL: $20,920
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Buoncristiani, A. M. Webb, G. R.	LARC/Lansing, D. L.	21-Mathematics

NSG 1514 **Christopher Newport College** 3608
An investigation of semiconductor electrodes

Period	*Obligations*	
09/01/78-08/31/79	FY78: $10,067	TOTAL: $10,067
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Buoncristiani, A. M.	LARC/Byvik, C. E. LARC/Conway, E. J.	13-Physics

NAS 1-14972 **College of William And Mary** 3609
Research in the area of physical sciences

Period	*Obligations*	
05/31/77-05/30/80	FY78: $182,818	TOTAL: $196,758
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Aceto, H., Jr.	LARC/Anderson, A. F.	99-Multi-Discip

NGL 47-006-058 **College of William And Mary** 3610
Research in the applied science program

Period	*Obligations*	
08/15/72-08/31/79	FY78:	TOTAL: $398,400
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rublein, G. T.	LARC/Anderson, A. F.	99-Multi-Discip

NSG 1095 **College of William And Mary** 3611
Molecular weight-property relationships of high performance polymers used for adhesives and composites

Period	*Obligations*	
09/01/74-09/30/78	FY78:	TOTAL: $41,294
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kranbuehl, D. E.	LARC/Young, P. R. LARC/Johnston, N. J.	12-Chemistry

NSG 1203 **College of William And Mary** 3612
Analysis of remote sensors for pollution

Period	*Obligations*	
08/01/75-07/31/79	FY78: $36,875	TOTAL: $124,750
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Park, J. H.	LARC/Russell, J. M., III LARC/Brockman, P.	31-Atmos Sci

NSG 1385 **College of William And Mary** 3613
New infrared detectors and solar cells

Period	*Obligations*	
02/01/77-01/31/79	FY78: $50,000	TOTAL: $90,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sher, A.	LARC/Crouch, R. K.	13-Physics

NSG 1435 **College of William And Mary** 3614
Development of a multi-target compiler writing system

Period	*Obligations*	
07/11/77-11/25/78	FY78: $42,085	TOTAL: $82,085
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Donegan, M. K. Feyock, S.	LARC/Staaeter, T. A.	21-Mathematics

NSG 1484 **College of William And Mary** **3615**
Atmos Spacelab 1 science investigation

Period	*Obligations*	
05/01/78-04/30/79	FY78: $32,398	TOTAL: $32,398
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Park, J. H.	LARC/Russell, J. M., III	31-Atmos Sci

NSG 7416 **College of William And Mary** **3616**
Research on turbulence in plasmas

Period	*Obligations*	
12/01/77-11/30/80	FY78: $32,600	TOTAL: $32,600
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Montgomery, D. C.	HQ-ST/King, J. H. HQ-ST/Schmerling, E. R.	19-Phys Sci, NEC

NAS 6-2707 **Eastern Shore Community College** **3617**
Informing general public and schools of activities of Wallops Flight Center

Period	*Obligations*	
01/01/76-12/31/78	FY78: $11,774	TOTAL: $35,319
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Unavailable	WFC/Milliner, J. B.	99-Multi-Discip

NCA 1-6 **George Mason University** **3618**
Summer student training program

Period	*Obligations*	
06/06/77-09/15/77	FY78:	TOTAL: $19,143
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Trehan, A. K.	LARC/Cox, J.	49-Engr, NEC

NCA 5-92 **George Mason University** **3619**
Study of forebiddea line emission from abundant heavy element ions in hot nebulae

Period	*Obligations*	
08/01/78-10/31/78	FY78: $4,700	TOTAL: $4,700
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kafatos, M.	GSFC/Hobbs, R. W.	11-Astronomy

NAS 1-14507 **Hampton Institute** **3620**
Conversion of flight records

Period	*Obligations*	
07/01/76-09/30/79	FY78:	TOTAL: $34,688
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Williams, G. K.	LARC/Jewell, J. W., Jr. LARC/Morris, G. J.	41-Aero Engr

NAS 1-14832 **Hampton Institute** **3621**
Summer research fellowship program

Period	*Obligations*	
02/04/77-10/31/79	FY78: $50,013	TOTAL: $143,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Darden, G. C.	LARC/Erickson, W. D.	19-Phys Sci, NEC

NAS 1-15445 **Hampton Institute** **3622**
Minimization of differences between simulated and actual flight data for area navigation (R-NAV) on high speed aircraft

Period	*Obligations*	
07/06/78-07/05/79	FY78: $14,592	TOTAL: $14,592
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hargrove, A.	LARC/Knox, C. E. LARC/Taylor, R. T.	41-Aero Engr

NGR 47-020-006 **Hampton Institute** **3623**
Fast optical pulse recording system for laser ranging

Period	*Obligations*	
12/01/73-07/31/78	FY78:	TOTAL: $113,921
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Trehan, A. K.	WFC/Hoge, F. E. WFC/Parsons, C. L.	19-Phys Sci, NEC

NSG 1294 **Hampton Institute** **3624**
The investigation of microprocessors for use as in-flight data collection systems

Period	*Obligations*	
04/01/76-03/31/79	FY78: $31,112	TOTAL: $109,297
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Trehan, A. K.	LARC/Katzberg, S. J.	45-Elec Engr

NSG 1456 **Hampton Institute** **3625**
Systems approach to theoretical fluid mechanics

Period	*Obligations*	
10/01/77-09/30/78	FY78: $32,660	TOTAL: $32,660
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Anyiwo, J. C.	LARC/Bushnell, D. M.	41-Aero Engr

NSG 1478 **Hampton Institute** **3626**
Improvements in digital optimal control of nonlinear multivariable constrained systems

Period	*Obligations*	
02/01/78-01/31/79	FY78: $39,383	TOTAL: $39,383
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hargrove, A.	LARC/Straeter, T. A. LARC/Parks, C. L.	21-Mathematics

NSG 1505 **Hampton Institute** **3627**
Experimental and theoretical investigation of free stream noise in supersonic nozzles

Period	*Obligations*	
04/01/78-03/31/79	FY78: $35,970	TOTAL: $35,970
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Anyiwo, J. C. Schopper, M. R.	LARC/Beckwith, I. E. LARC/Bushnell, D. M.	41-Aero Engr

NSG 1552 **Hampton Institute** **3628**
Investigation of microprocessors for use as controllers for tunable diode lasers

Period	*Obligations*	
07/24/78-07/23/79	FY78: $35,453	TOTAL: $35,453
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Trehan, A. K. Davenport, J.	LARC/Katzberg, S. J. LARC/Rowland, C. W.	45-Elec Engr

NSG 1209 **Mary Baldwin College** **3629**
Faculty and student research participation in applied statistics at NASA/LRC

Period	*Obligations*	
07/01/75-04/30/79	FY78: $9,730	TOTAL: $34,839
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sawyer, J. O.	LARC/Campbell, J. W. LARC/Brooks, D. R.	21-Mathematics

NAS 1-14193 **Old Dominion University** **3630**
Research in physical and life sciences

Period	*Obligations*	
10/01/75-09/30/78	FY78: $184,467	TOTAL: $588,505
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Maygarden, E. M.	LARC/Anderson, A. F.	99-Multi-Discip

NGL 47-003-067 **Old Dominion University** **3631**
Interdisciplinary investigation of atmospheric processes and constituents of the Mid-Atlantic coastal region

Period	*Obligations*	
05/10/72-08/31/77	FY78:	TOTAL: $300,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kindle, E. C.	HQ-ET/Vitale, J. A.	31-Atmos Sci

NGR 47-003-052 **Old Dominion University** **3632**
Graduate research program in aeronautics and air transportation

Period	*Obligations*	
05/12/71-08/31/80	FY78: $55,000	TOTAL: $579,918
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Roberts, A. S., Jr.	LARC/Erickson, W. D.	41-Aero Engr

NGT 47-003-028 **Old Dominion University** **3633**
Summer faculty fellowship program in engineering systems design

Period	*Obligations*	
11/14/69-03/31/79	FY78: $125,941	TOTAL: $897,796
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McRee, G. J.	HQ-LU/Carter, C. H.	49-Engr, NEC

NGT 47-003-029 **Old Dominion University** **3634**
Summer faculty fellowship program in research

Period	*Obligations*	
11/14/69-03/31/79	FY78: $128,718	TOTAL: $1,007,544
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Goglia, G. L.	HQ-LU/Carter, C. H.	49-Engr, NEC

NSG 1028 **Old Dominion University** **3635**
Collection, reduction, and interpretation of neutral atmospheric measurements

Period	*Obligations*	
04/01/74-03/15/79	FY78: $125,000	TOTAL: $360,767
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Goglia, G. L. Hinson, E.	LARC/Keating, G. M.	31-Atmos Sci

NSG 1079 **Old Dominion University** **3636**
Optimal adaptive wind tunnel control

Period	*Obligations*	
09/01/74-11/30/78	FY78: $24,693	TOTAL: $98,649
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Tcheng, P. L.	LARC/Tripp, J. S.	45-Elec Engr

NSG 1087 **Old Dominion University** **3637**
Turbulence closure modeling for high Mach number turbulent shear flows

Period	*Obligations*	
08/01/74-10/31/78	FY78: $35,520	TOTAL: $141,075
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Goglia, G. L. Oh, Y. H.	LARC/Harris, J. E. LARC/Rudy, D. H.	41-Aero Engr

NSG 1098 **Old Dominion University** **3638**
Investigation of nozzle afterbody viscous interaction effects by finite element methods

Period	*Obligations*	
09/09/74-05/30/77	FY78:	TOTAL: $36,940
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cooke, C. H.	LARC/Harris, J. E.	41-Aero Engr

NSG 1131 **Old Dominion University** **3639**
Remote measurements of atmospheric trace constituents

Period	*Obligations*	
01/01/75-01/31/79	FY78: $34,408	TOTAL: $120,963
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kindle, E. C. Twitty, J. Brost, R.	LARC/Dodgen, J. A. LARC/Lebel, P. J.	31-Atmos Sci

NSG 1143 **Old Dominion University** **3640**
Sensor for measuring instantaneous angle of attack of helicopter blades

Period	*Obligations*	
01/13/75-04/12/79	FY78: $24,463	TOTAL: $127,676
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Barna, P. S.	LARC/Kershner, D. D. LARC/Pitts, F.	41-Aero Engr

NSG 1152 **Old Dominion University** **3641**
The Earth/Moon system: Dynamics and parameter estimation

Period	*Obligations*	
02/17/75-01/31/79	FY78:	TOTAL: $131,179
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Breedlove, W. J., Jr.	LARC/Gapcynski, J. P.	19-Phys Sci, NEC

NSG 1167 **Old Dominion University** **3642**
The structural behavior of advanced composite materials

Period	*Obligations*	
06/01/75-05/31/81	FY78: $29,853	TOTAL: $135,490
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Thornton, E. A.	LARC/Davis, J. G., Jr. LARC/Pride, R. A.	41-Aero Engr

NSG 1177 **Old Dominion University** 3643
Experimental and analytical studies in fluidics

Period	*Obligations*	
05/01/75-02/28/81	FY78: $15,758	TOTAL: $83,302
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Goglia, G. L.	LARC/Hellbaum, R. F.	45-Elec Engr

NSG 1226 **Old Dominion University** 3644
An analytical and/or numerical study of three-dimensional boundary layer flows

Period	*Obligations*	
09/01/75-10/31/78	FY78: $32,384	TOTAL: $91,302
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Goglia, G. L.	LARC/Harris, J. E.	41-Aero Engr
Vatsa, V. N.	LARC/Rudy, D. H.	

NSG 1252 **Old Dominion University** 3645
The investigation of advanced remote sensing and inversion techniques for the measurement of atmospheric constituents

Period	*Obligations*	
09/15/75-07/31/78	FY78: $5,344	TOTAL: $117,505
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Deepak, A.	LARC/McCormick, M. P.	31-Atmos Sci
	LARC/Chu, W. P.	

NSG 1271 **Old Dominion University** 3646
Space shuttle experiments studies

Period	*Obligations*	
03/01/76-02/28/79	FY78: $101,933	TOTAL: $402,475
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Brock, F. J.	LARC/Melfi, L. T., Jr.	13-Physics
Ciay, F. P., Jr.	LARC/Outlaw, R. A.	
Hueser, J. E.		

NSG 1279 **Old Dominion University** 3647
Preliminary investigations into the active control of large space structures

Period	*Obligations*	
02/15/76-06/30/79	FY78: $39,424	TOTAL: $83,164
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Tweed, J.	LARC/Card, M. F.	49-Engr, NEC
Hyer, M. W.	LARC/Housner, J. M.	

NSG 1315 **Old Dominion University** 3648
Wind tunnel studies of advanced cargo concepts

Period	*Obligations*	
06/22/76-06/21/79	FY78: $44,296	TOTAL: $122,821
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Goglia, G. L.	LARC/Peterson, J. B., Jr.	41-Aero Engr
Rao, D. M.		

NSG 1321 **Old Dominion University** 3649
Concepts for structurally compatible thermal finite elements

Period	*Obligations*	
09/01/76-12/31/79	FY78: $18,543	TOTAL: $46,541
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Thornton, E. A.	LARC/Wieting, A. R.	49-Engr, NEC

NSG 1324 **Old Dominion University** 3650
The contribution of molecular relaxation in nitrogen to the absorption of sound in the atmosphere

Period	*Obligations*	
09/01/76-12/31/78	FY78: $44,022	TOTAL: $104,204
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Zuckerwar, A. J.	LARC/Holmes, H. K.	13-Physics
Kernell, R. L.		

NSG 1331 **Old Dominion University** 3651
Antenna design and development for microwave subsystem experiments for the terminal configured vehicle project

Period	*Obligations*	
08/01/76-09/30/78	FY78: $16,095	TOTAL: $47,095
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Becher, J.	LARC/Campbell, T. G.	45-Elec Engr
Cohen, N. V.	LARC/Young, W. R.	

NSG 1341 **Old Dominion University** 3652
Science and software support for spacecraft solar occultation experiments

Period	*Obligations*	
10/01/76-03/31/79	FY78:	TOTAL: $40,514
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Chu, W. P.	LARC/McMaster, L. R.	31-Atmos Sci
Becher, J.	LARC/McCormick, M. P.	

NSG 1357 **Old Dominion University** 3653
Vortex lattice wing design program

Period	*Obligations*	
11/08/76-11/07/78	FY78: $19,168	TOTAL: $31,665
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kuhlman, J. M.	LARC/Lamar, J. E.	41-Aero Engr
	LARC/Polhamus, E. C.	

NSG 1362 **Old Dominion University** 3654
Fission induced plasmas

Period	*Obligations*	
12/16/76-12/15/78	FY78: $22,290	TOTAL: $51,784
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Harries, W. L.	LARC/Hohl, F.	13-Physics

NSG 1370 **Old Dominion University** 3655
Dynamic characteristics of rotor blades with pendulum absorbers

Period	*Obligations*	
01/01/77-10/31/78	FY78: $32,021	TOTAL: $42,069
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Goglia, G. L.	LARC/Hammond, C. E.	41-Aero Engr
Murthy, V. R.		

NSG 1379 **Old Dominion University** 3656
Feasibility study of a microprocessor based oculometer system

Period	*Obligations*	
01/01/77-12/31/78	FY78: $48,490	TOTAL: $103,262
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Varanasi, M. R.	LARC/Gainer, P. A.	45-Elec Engr
	LARC/Waller, M. C.	

NSG 1393 **Old Dominion University** **3657**
Computational solution of atmospheric chemistry problems

Period	*Obligations*	
06/01/77-06/30/79	FY78:	TOTAL: $41,828
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Goglia, G. L.	LARC/Phillips, D. H.	12-Chemistry
Norbeck, J. M.	LARC/Tolson, R. H.	

NSG 1394 **Old Dominion University** **3658**
Evaluation of atmospheric trace constituent sensors operating from remote space and airborne platforms

Period	*Obligations*	
02/14/77-05/14/79	FY78: $33,312	TOTAL: $70,083
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kindle, E. C.	LARC/Reichle, H. G., Jr.	31-Atmos Sci

NSG 1395 **Old Dominion University** **3659**
Data reduction analysis and application technique development for atmospheric trace gas constituents derived from remote sensors on satellite or airborne platforms

Period	*Obligations*	
02/14/77-11/13/78	FY78: $63,673	TOTAL: $136,837
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kindle, E. C.	LARC/Beck, S. M.	31-Atmos Sci

NSG 1441 **Old Dominion University** **3660**
Interpretation and evaluation of experimental data related to remote sensing of ocean-dumped sewage sludge

Period	*Obligations*	
07/18/77-02/17/79	FY78:	TOTAL: $55,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kuo, C. Y.	LARC/Johnson, R. W.	39-Env Sci, NEC
Paeoria, P. S.		

NSG 1459 **Old Dominion University** **3661**
Analysis and identification of flight measurements by time-domain/randomdec technique

Period	*Obligations*	
10/01/77-09/30/79	FY78: $44,202	TOTAL: $44,202
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ibrahim, S. R.	LARC/Hanks, B. R.	46-Mech Engr

NSG 1464 **Old Dominion University** **3662**
Effects of angle-of-attack on the coupled radiative and convective heat transfer about blunt planetary entry bodies

Period	*Obligations*	
11/01/77-10/31/78	FY78: $34,434	TOTAL: $34,434
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Tiwari, S. N.	LARC/Graves, R. A., Jr.	41-Aero Engr
Kumar, A.		

NSG 1465 **Old Dominion University** **3663**
Long-term temperature effects on galium arsenite solar cells

Period	*Obligations*	
01/01/78-04/15/79	FY78: $40,500	TOTAL: $40,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Heinbockel, J. H.	LARC/Conway, E. J.	13-Physics
	LARC/Walker, G. H.	

NSG 1466 **Old Dominion University** **3664**
Expanded development of heterodyne detector systems for measurement of atmospheric trace constituents

Period	*Obligations*	
10/15/77-10/14/79	FY78: $65,600	TOTAL: $65,600
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Copeland, G. E.	LARC/Hoell, J. M.	31-Atmos Sci
Harward, C. N.	LARC/Bair, C. H.	

NSG 1473 **Old Dominion University** **3665**
Development of controller design methodology for large flexible space structures

Period	*Obligations*	
11/15/77-11/14/78	FY78: $39,641	TOTAL: $39,641
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Roberts, A. S., Jr.	LARC/Groom, N. J.	49-Engr, NEC
Joshi, S. M.		

NSG 1477 **Old Dominion University** **3666**
Investigation of potential of differential absorption lidar techniques for remote sensing of atmospheric pollutants

Period	*Obligations*	
11/15/77-12/14/78	FY78: $112,978	TOTAL: $112,978
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kindle, E. C.	LARC/Browell, E. V.	39-Env Sci, NEC

NSG 1480 **Old Dominion University** **3667**
Comparative study of flare control laws

Period	*Obligations*	
12/15/77-12/14/78	FY78: $32,923	TOTAL: $32,923
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Breedlove, W. J., Jr.	LARC/Creedon, J. F.	41-Aero Engr
Nadkarni, A. A.	LARC/Hueschen, R. M.	

NSG 1491 **Old Dominion University** **3668**
Hot wire laser Doppler velocimeter and mean measurements on flow phenomena induced by suction through perforated surfaces

Period	*Obligations*	
02/01/78-01/31/79	FY78: $28,467	TOTAL: $28,467
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Goglia, G. L.	LARC/Harvey, W. D.	41-Aero Engr
Wilkerson, S.		

NSG 1492 **Old Dominion University** **3669**
Influence of precursor heating on nonequilibrium viscous flow around a Jovian entry body

Period	*Obligations*	
02/01/78-01/31/79	FY78: $15,910	TOTAL: $15,910
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Tiwari, S. N.	LARC/Graves, R. A., Jr.	41-Aero Engr

NSG 1500 **Old Dominion University** **3670**
Investigation of the flow-phenomena around a Jovian entry body under chemical and radiative nonequilibrium conditions

Period	*Obligations*	
02/01/78-01/31/79	FY78: $14,906	TOTAL: $14,906
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Tiwari, S. N.	LARC/Sutton, K.	49-Engr, NEC
	LARC/Walberg, G. D.	

NSG 1503 **Old Dominion University** **3671**
Cryogenic transonic tunnel modeling and flow control

Period	*Obligations*	
03/15/78-03/14/79	FY78: $36,345	TOTAL: $36,345
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Goglia, G. L.	LARC/Kilgore, R. A.	41-Aero Engr
Balakrishna, S.	LARC/Adcock, J. B.	

NSG 1507 **Old Dominion University** **3672**
Photoelastic studies of advanced lap joint concept

Period	*Obligations*	
03/15/78-08/31/79	FY78: $17,153	TOTAL: $17,153
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Thornton, E. A.	LARC/Dixon, S. C.	42-Astro Engr

NSG 1517 **Old Dominion University** **3673**
A numerical investigation of viscous slot flow

Period	*Obligations*	
04/15/78-09/30/79	FY78: $31,210	TOTAL: $31,210
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cooke, C. H.	LARC/Barnwell, R. W.	41-Aero Engr

NSG 1519 **Old Dominion University** **3674**
Output feedback synthesis for stochastic multivariable systems

Period	*Obligations*	
04/01/78-03/31/79	FY78: $40,168	TOTAL: $40,168
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Liberty, S. R.	LARC/Moul, M. T.	41-Aero Engr
	LARC/Elliott, J. R.	

NSG 1521 **Old Dominion University** **3675**
Development of high strength and toughness 7000 series aluminum alloys

Period	*Obligations*	
05/01/78-04/30/79	FY78: $34,000	TOTAL: $34,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cupschalk, S. G.	LARC/Lisagor, W. B.	47-Materials Engr

NSG 1522 **Old Dominion University** **3676**
Radiative transfer models for the earth radiation budget and climatic studies

Period	*Obligations*	
04/01/78-12/31/78	FY78: $29,437	TOTAL: $29,437
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Tiwari, S. N.	LARC/Suttles, J. T.	31-Atmos Sci
Gupta, S. K.	LARC/Young, G. R.	

NSG 1560 **Old Dominion University** **3677**
Development of a nonlinear vortex method

Period	*Obligations*	
09/01/78-08/31/79	FY78: $23,230	TOTAL: $23,230
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kandil, O. A.	LARC/Yates, E. C., Jr.	41-Aero Engr
	LARC/Young, W. H., Jr.	

NSG 1561 **Old Dominion University** **3678**
Investigation of aerodynamic characteristics of wings having vortex flow using different numerical codes

Period	*Obligations*	
09/01/78-08/31/79	FY78: $8,000	TOTAL: $8,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Goglia, G. L.	LARC/Lamar, J. E.	41-Aero Engr
Reddy, C. S.	LARC/Polhamus, E. C.	

NSG 5053 **Old Dominion University** **3679**
Radiation investigations of optical and electronic components used in astronomical satellite studies

Period	*Obligations*	
02/17/75-11/30/78	FY78:	TOTAL: $177,747
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Becher, J.	GSFC/Fowler, W. B.	19-Phys Sci, NEC
Kernell, R. L.		

NSG 5289 **Old Dominion University** **3680**
Radiation effects studies for the high resolution spectrograph

Period	*Obligations*	
07/10/78-12/31/78	FY78: $40,000	TOTAL: $40,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Becher, J.	GSFC/Fowler, W. B.	13-Physics
Kernell, R. L.		

NAS 1-12754 **University of Virginia** **3681**
Research in the physical and life sciences

Period	*Obligations*	
10/26/73-10/26/76	FY78:	TOTAL: $86,896
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Barnes, D. W.	LARC/Martin, D. J.	99-Multi-Discip

NAS 1-14862 **University of Virginia** **3682**
Interactive software invocation system

Period	*Obligations*	
04/01/77-03/31/79	FY78: $9,000	TOTAL: $105,558
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Berman, W. J.	LARC/Will, R. W.	22-Computer Science
	LARC/Straeter, T. A.	

NAS 1-14908 **University of Virginia** **3683**
Air transportation systems research

Period	*Obligations*	
05/02/77-05/01/78	FY78: $55,250	TOTAL: $97,658
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kuhlthau, A. R.	LARC/Conner, D. W.	49-Engr, NEC
	LARC/Brissenden, R. F.	

NAS 1-15160 **University of Virginia** **3684**
Viking guest investigator program

Period	*Obligations*	
12/08/77-09/30/78	FY78: $14,717	TOTAL: $14,717
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Johnson, R. E.	LARC/Spence, D. C.	31-Atmos Sci

NAS 5-20999 **University of Virginia** **3685**
Analysis of data for ERTS follow-on investigation

Period	*Obligations*	
04/03/75-01/03/78	FY78:	TOTAL: $90,442
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Dolan, R.	GSFC/Oseroff, H.	39-Env Sci, NEC

NAS 5-22346 **University of Virginia** **3686**
Design and application of a one meter UV-optical telescope for Spacelab astronomy missions

Period	*Obligations*	
04/29/75-09/30/78	FY78: $10,544	TOTAL: $33,468
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
O'Connell, R. W.	GSFC/Wilson, L.	11-Astronomy

NAS 5-24218 **University of Virginia** **3687**
Research study on mixer diodes for submillimeter applications

Period	*Obligations*	
06/23/77-11/15/78	FY78: $17,798	TOTAL: $29,548
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mattauch, R. J.	GSFC/Lamb, G. M.	49-Engr, NEC
	GSFC/Dargo, D. R.	

NAS 8-31951 **University of Virginia** **3688**
Space shuttle main engine whirl problem

Period	*Obligations*	
04/19/76-10/31/78	FY78: $60,000	TOTAL: $211,329
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gunter, E. J.	MSFC/Goetz, O. K.	46-Mech Engr
	MSFC/Jewell, R. E.	

NGL 47-005-066 **University of Virginia** **3689**
Studies in astronomy and related scientific and engineering fields

Period	*Obligations*	
10/10/66-09/14/77	FY78:	TOTAL: $199,256
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Frederick, L. W.	HQ-SC/Roman, N. G.	11-Astronomy
	HQ-SC/Boggess, N. W.	

NGR 47-005-172 **University of Virginia** **3690**
Interpretation of surface features and surface processes on Mars

Period	*Obligations*	
03/03/71-11/14/78	FY78: $19,110	TOTAL: $244,693
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Howard, A.	HQ-SL/Dwornik, S.E.	32-Geological Sci
	HQ-SL/Boyce, J. M.	

NSG 1010 **University of Virginia** **3691**
Superconducting magnetic suspension and balance experiment

Period	*Obligations*	
03/01/74-06/30/78	FY78: $5,906	TOTAL: $274,491
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Zapata, R. N.	LARC/Kilgore, R. A.	41-Aero Engr
Humphris, R. R.		

NSG 1128 **University of Virginia** **3692**
Optimization of MLS receivers for multipath environments

Period	*Obligations*	
12/16/74-05/31/79	FY78: $91,670	TOTAL: $282,295
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McAlpine, G. A.	LARC/Bundick, W. T.	45-Elec Engr
Highfill, J. H.		

NSG 1180 **University of Virginia** **3693**
Interior aircraft cabin noise: Field study

Period	*Obligations*	
05/19/75-12/31/78	FY78:	TOTAL: $140,325
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Jacobson, I. D.	LARC/Mayes, W. H.	41-Aero Engr
	LARC/Cawthorn, J. M.	

NSG 1335 **University of Virginia** **3694**
Investigation of numerical methods for use in real-time simulation

Period	*Obligations*	
10/01/76-07/31/79	FY78: $28,767	TOTAL: $58,085
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Brown, R. L., Jr.	LARC/Bowles, R. L.	21-Mathematics

NSG 1388 **University of Virginia** **3695**
Computation of minimum noise aircraft landing trajectories

Period	*Obligations*	
02/01/77-08/31/78	FY78:	TOTAL: $34,314
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cook, G. E.	LARC/Hueschen, R. M.	49-Engr, NEC
	LARC/Walsh, T. M.	

NSG 1399 **University of Virginia** **3696**
A study of the instrument flight rules helicopter system

Period	*Obligations*	
03/01/77-09/30/78	FY78:	TOTAL: $43,495
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Jacobson, I. D.	LARC/Tapscott, R. J.	49-Engr, NEC
	LARC/Garren, J. F., Jr.	

NSG 1403 **University of Virginia** **3697**
The hardware and software aspects of real-time flight simulation

Period	*Obligations*	
03/01/77-06/30/78	FY78:	TOTAL: $57,938
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Parrish, E. A., Jr.	LARC/Barker, L. E.	
Cook, G. E.		22-Computer Science
McVey, E. S.	LARC/Bowles, R. L.	

NSG 1427 **University of Virginia** **3698**
Studies of the interplanetary particulate environment

Period	*Obligations*	
07/01/77-09/30/79	FY78: $19,250	TOTAL: $37,400
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Singer, S. F.	LARC/Humes, D. H.	11-Astronomy
Stanley, J. E.		

NSG 1458 **University of Virginia** **3699**
Definition of subsets for restricted computer architectures (hal/s)

Period	*Obligations*	
10/01/77-01/31/79	FY78: $50,408	TOTAL: $50,408
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Pratt, T. W.	LARC/Will, R. W.	22-Computer Science
	LARC/Foudriat, E. C.	

NSG 1509 **University of Virginia** **3700**
Evaluating and minimizing noise impact due to aircraft flyover

Period	*Obligations*	
04/01/78-03/31/79	FY78: $59,220	TOTAL: $59,220
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Jacobson, I. D.	LARC/Deloach, R.	69-Psych, NEC
Cook, G. E.		

NSG 2225 **University of Virginia** **3701**
Mammalian body size, composition and growth as influenced by hypokinesia

Period	*Obligations*	
04/01/77-03/31/79	FY78: $25,000	TOTAL: $50,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Pitts, G. C.	ARC/Holton, E. M.	51-Biology

NSG 3177 **University of Virginia** **3702**
Investigation of rotor transient analysis by the model method

Period	*Obligations*	
12/15/77-12/14/78	FY78: $34,865	TOTAL: $34,865
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gunter, E. J.	LERC/Cunningham, R. E.	46-Mech Engr
Allaire, P. E.	LERC/Fleming, D. F.	
Barrett, L. E.		

NSG 7266 **University of Virginia** **3703**
Demand modeling and its effect on the design and operation of transport aircraft

Period	*Obligations*	
10/01/76-05/31/78	FY78:	TOTAL: $60,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kuhlthau, A. R.	HQ-RX/Rollins, R. H.	72-Economics
Jacobson, I. D.	LARC/Conner, D. W.	

NSG 7364 **University of Virginia** **3704**
Observations of the satellites of the outer planets

Period	*Obligations*	
07/01/78-06/30/79	FY78: $20,415	TOTAL: $40,051
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ianna, P. A.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Murphy, R. E.	

NGR 47-002-041 **Virginia Commonwealth University** **3705**
Isomer effects on polyimide properties

Period	*Obligations*	
10/11/72-03/31/78	FY78:	TOTAL: $78,355
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Stump, B. L.	LARC/Bell, V. L.	12-Chemistry

NSG 9063 **Virginia Commonwealth University** **3706**
Carotid arterial baroreflex mechanisms

Period	*Obligations*	
10/01/77-11/30/78	FY78: $30,378	TOTAL: $30,378
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Eckberg, D. L.	JSC/Hull, W. E.	52-Clinical Med

NSG 7355 **Virginia Military Institute** **3707**
Oxidation-reduction processes in synthetic silicate melts

Period	*Obligations*	
06/01/77-01/31/79	FY78:	TOTAL: $34,907
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Schreiber, H. D.	HQ-SL/Goldstein, B. E.	
	HQ-SL/Quaide, W. L.	32-Geological Sci

DEN 3 65 **Virginia Polytechnic Institute** **3708**
Electronically computed dc motor for electric passenger vehicles

Period	*Obligations*	
09/13/78-06/27/79	FY78: $111,705	TOTAL: $111,705
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Demerdash, N. A.	LERC/Maslowski, E. A.	45-Elec Engr
Lee, F. C.		

NAS 1-13175 **Virginia Polytechnic Institute** **3709**
Research in the physical and life sciences

Period	*Obligations*	
05/10/74-05/10/77	FY78:	TOTAL: $233,760
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Robertson, R. M.	LARC/Martin, D. J.	49-Engr, NEC

NAS 1-13884 **Virginia Polytechnic Institute** **3710**
Study of theory of acoustical propagation through a high subsonic Mach number duct constriction

Period	*Obligations*	
04/25/75-09/30/78	FY78: $30,710	TOTAL: $124,370
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Nayfeh, A. H.	LARC/Posey, J.	13-Physics

NAS 1-15080 **Virginia Polytechnic Institute** **3711**
Research in the area of physical sciences

Period	*Obligations*	
08/25/77-08/24/79	FY78: $68,507	TOTAL: $71,447
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Unavailable	LARC/Anderson, A. F.	99-Multi-Discip
	LARC/Royall, J. F.	

NAS 5-22577 **Virginia Polytechnic Institute** 3712
Communications link characterization study

Period	Obligations	
09/08/76-12/08/78	FY78: $159,999	TOTAL: $459,989
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bostian, C. W. Stutzman, W. L. Wiley, P. H.	GSFC/Hirschmann, E.	45-Elec Engr

NAS 6-2388 **Virginia Polytechnic Institute** 3713
Remote sensing in agriculture

Period	Obligations	
11/01/73-09/30/78	FY78: $49,152	TOTAL: $419,679
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Powell, N. L.	WFC/Scott, J. H.	39-Env Sci, NEC

NAS 9-15091 **Virginia Polytechnic Institute** 3714
Dynamic math model of dc motor for aerospace applications

Period	Obligations	
09/01/76-05/31/78	FY78:	TOTAL: $23,978
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Demerdash, N. A.	JSC/Edge, J. T.	45-Elec Engr

NAS 9-15287 **Virginia Polytechnic Institute** 3715
Development of a stereofluoroscopy system

Period	Obligations	
06/01/77-07/01/79	FY78:	TOTAL: $35,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rivers, D. B.	JSC/Day, J. L.	52-Clinical Med

NGL 47-004-067 **Virginia Polytechnic Institute** 3716
Measurement of the ground wind structure

Period	Obligations	
06/15/70-09/30/78	FY78: $60,250	TOTAL: $533,260
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Tieleman, H. W.	WFC/Carr, R. E.	31-Atmos Sci

NGL 47-004-080 **Virginia Polytechnic Institute** 3717
Synthesis, energetics, and chemical characterization of unusual molecules of interest in astronomy at temperatures below 100 K

Period	Obligations	
04/19/71-06/30/78	FY78:	TOTAL: $61,960
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McGee, H. A.	HQ-SL/Brunk, W. E.	11-Astronomy

NGR 47-004-090 **Virginia Polytechnic Institute** 3718
Research program in aeronautics & air transportation systems

Period	Obligations	
06/25/71-06/30/79	FY78: $99,829	TOTAL: $688,829
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Drew, D. R.	LARC/Erickson, W. D.	41-Aero Engr

NGR 47-004-129 **Virginia Polytechnic Institute** 3719
Composite materials research and education

Period	Obligations	
01/01/74-08/31/79	FY78: $143,951	TOTAL: $530,515
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Herakovich, C. T.	LARC/Davis, J. G., Jr. LARC/Pride, R. A.	49-Engr, NEC

NSG 1015 **Virginia Polytechnic Institute** 3720
Self reorganizing flight control systems geometric formulation

Period	Obligations	
03/06/74-01/31/77	FY78:	TOTAL: $41,265
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cliff, E. M.	LARC/Montgomery, R.C.	41-Aero Engr

NSG 1020 **Virginia Polytechnic Institute** 3721
Determining ion kinetic energies by a method of mass spectrometer peak-shape variation

Period	Obligations	
07/01/74-09/30/78	FY78: $7,500	TOTAL: $27,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sanzone, G.	LARC/Smith, A.	13-Physics

NSG 1064 **Virginia Polytechnic Institute** 3722
Synthesis and polymerication of aromatic secondary diamines

Period	Obligations	
06/01/74-10/31/77	FY78:	TOTAL: $43,173
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wolfe, J. F.	LARC/Johnston, N. J. LARC/Bell, V. L.	12-Chemistry

NSG 1085 **Virginia Polytechnic Institute** 3723
Kinetics of the reactions of acid anhydrides with aromatic amines in aprotic solvents

Period	Obligations	
07/01/74-10/31/78	FY78:	TOTAL: $93,519
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mason, J. G.	LARC/Young, P. R.	12-Chemistry

NSG 1124 **Virginia Polytechnic Institute** 3724
A fundamental approach to adhesion: Synthesis surface analysis, thermodynamics and mechanics

Period	Obligations	
12/01/74-11/30/78	FY78: $69,793	TOTAL: $272,893
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wightman, J. P.	LARC/Progar, D. J. LARC/Price, H. L.	12-Chemistry

NSG 1239 **Virginia Polytechnic Institute** 3725
Aircraft adaptive learning control systems

Period	Obligations	
09/15/75-04/14/79	FY78:	TOTAL: $51,100
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
VanLandingham, H.F.	LARC/Montgomery, R.C.	41-Aero Engr

NSG 1250 **Virginia Polytechnic Institute** 3726
High temperature composite materials for aerospace structures research

Period	*Obligations*	
10/01/75-09/30/79	FY78:	TOTAL: $65,562
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Herakovich, C. T.	LARC/Hoffman, E. L.	49-Engr, NEC
Hodges, W. T.	LARC/Davis, J. G., Jr.	

NSG 1254 **Virginia Polytechnic Institute** 3727
Short beam shear tests of polymeric laminates and unidirectional composites

Period	*Obligations*	
10/01/75-09/30/79	FY78:	TOTAL: $59,994
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Stinchcomb, W. W.	LARC/Hoffman, E. L.	46-Mech Engr
Henneke, E. G.	LARC/Deaton, J. W.	

NSG 1255 **Virginia Polytechnic Institute** 3728
Application of stability theory to laminar flow control

Period	*Obligations*	
10/01/75-10/31/78	FY78: $60,000	TOTAL: $180,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Nayfeh, A. H.	LARC/Hefner, J. N.	41-Aero Engr
Saric, W. S.	LARC/Harvey, W. D.	

NSG 1262 **Virginia Polytechnic Institute** 3729
Steady vortex lattice technique development

Period	*Obligations*	
12/01/75-04/30/79	FY78: $8,100	TOTAL: $55,141
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mook, D. T.	LARC/Yates, E. C., Jr.	41-Aero Engr
	LARC/Young, W. H., Jr.	

NSG 1275 **Virginia Polytechnic Institute** 3730
An analytic study of a laminar diffusion flame

Period	*Obligations*	
01/15/76-08/31/78	FY78:	TOTAL: $23,043
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Frair, K. L.	LARC/Maahs, H. G.	19-Phys Sci, NEC

NSG 1276 **Virginia Polytechnic Institute** 3731
A study of multiple-shaker modal survey testing

Period	*Obligations*	
02/15/76-09/14/78	FY78:	TOTAL: $51,958
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hallauer, W. L., Jr.	LARC/Miserentino, R.	49-Engr, NEC

NSG 1286 **Virginia Polytechnic Institute** 3732
Research in acetylene containing monomers

Period	*Obligations*	
03/01/76-05/31/77	FY78:	TOTAL: $23,600
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Ogliaruso, M. A.	LARC/StClair, T. L.	12-Chemistry
	LARC/Johnston, N. J	

NSG 1354 **Virginia Polytechnic Institute** 3733
Study of an automatic trajectory following control system

Period	*Obligations*	
10/15/76-11/14/78	FY78: $36,340	TOTAL: $63,722
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
VanLandingham, H. F.	LARC/Creedon, J. F.	41-Aero Engr
Moose, R. L.	LARC/Hueschen, R. M.	

NSG 1358 **Virginia Polytechnic Institute** 3734
Experiments on the stability and transition of two-dimensional and three-dimensional boundary layers with suction

Period	*Obligations*	
12/01/76-11/30/78	FY78: $50,000	TOTAL: $127,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Saric, W. S.	LARC/Hefner, J. N.	41-Aero Engr
	LARC/Harvey, W. D.	

NSG 1364 **Virginia Polytechnic Institute** 3735
Investigation and characterization of constraint effects on flaw growth during fatigue loading of composite materials

Period	*Obligations*	
12/01/76-03/31/79	FY78: $57,503	TOTAL: $112,701
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Reifsnider, K. L.	LARC/Whitcomb, J. D.	
Stinchcomb, W. W.		47-Materials Engr
	LARC/Roderick, G. L.	

NSG 1376 **Virginia Polytechnic Institute** 3736
Regression in the presence of correlated errors

Period	*Obligations*	
01/01/77-12/31/78	FY78:	TOTAL: $14,663
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Myers, R. H.	LARC/Campbell, J. W.	21-Mathematics
Reynolds, M. R., Jr.		

NSG 1382 **Virginia Polytechnic Institute** 3737
Fault tree analysis of tensile failure of fiberous composites

Period	*Obligations*	
02/01/77-06/30/79	FY78: $10,636	TOTAL: $23,296
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Louthan, M. R., Jr.	LARC/Tenney, D. R.	47-Materials Engr
	LARC/Brewer, W. D.	

NSG 1389 **Virginia Polytechnic Institute** 3738
Interaction of chlorine and hydrogen chloride with alumina, asbestos, and silica

Period	*Obligations*	
02/14/77-01/31/79	FY78: $4,851	TOTAL: $24,615
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wightman, J. P.	LARC/Pellett, G. L.	12-Chemistry

NSG 1428 **Virginia Polytechnic Institute** 3739
The incorporation of metal ions polyimides

Period	*Obligations*	
07/01/77-09/30/78	FY78:	TOTAL: $47,367
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Taylor, L. T.	LARC/Slemp, W. S.	12-Chemistry
	LARC/St Clair, T. L.	

NSG 1470 **Virginia Polytechnic Institute** **3740**
Control of interface reactions in composites

Period	*Obligations*	
11/07/77-11/06/78	FY78: $26,985	TOTAL: $26,985
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Houska, C. R.	LARC/Tenney, D. R.	47-Materials Engr
	LARC/Brewer, W. D.	

NSG 1512 **Virginia Polytechnic Institute** **3741**
Advanced matrix resins for graphite composites

Period	*Obligations*	
04/01/78-12/31/78	FY78: $40,908	TOTAL: $40,908
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McGrath, J. E.	LARC/StClair, A. K.	12-Chemistry
Ward, T. C.	LARC/StClair, T. L.	

NSG 1520 **Virginia Polytechnic Institute** **3742**
Hypersonic viscous flows over three-d bodies at angle of attack

Period	*Obligations*	
04/01/78-03/31/79	FY78: $25,004	TOTAL: $25,004
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lewis, C. H.	LARC/Moss, J. N.	41-Aero Engr

NSG 1524 **Virginia Polytechnic Institute** **3743**
New aromatic polyamides containing n-propargyl groups as potential cross linking functions

Period	*Obligations*	
06/01/78-05/31/79	FY78: $22,472	TOTAL: $22,472
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wolfe, J. F.	LARC/StClair, T. L.	12-Chemistry
	LARC/Johnston, N. J.	

NSG 1525 **Virginia Polytechnic Institute** **3744**
An augmented Lagrangian penalty function algorithm for nonlinear programming

Period	*Obligations*	
04/15/78-12/14/78	FY78: $19,610	TOTAL: $19,610
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Frair, L. C.	LARC/Straeter, T. A.	
	LARC/Park, S. K.	22-Computer Science

NSG 1526 **Virginia Polytechnic Institute** **3745**
Active damping of modal vibrations by force apportioning

Period	*Obligations*	
06/16/78-06/15/79	FY78: $28,211	TOTAL: $28,211
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hallauer, W. L., Jr.	LARC/Miserentino, R.	46-Mech Engr

NSG 1527 **Virginia Polytechnic Institute** **3746**
Distributed surface control for large space systems

Period	*Obligations*	
06/01/78-11/30/78	FY78: $27,966	TOTAL: $27,966
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
VanLandingham, H. F.	LARC/Montgomery, R. C.	45-Elec Engr

NSG 1531 **Virginia Polytechnic Institute** **3747**
Environmental effects on advanced composites

Period	*Obligations*	
08/01/78-07/31/79	FY78: $57,170	TOTAL: $57,170
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Unnam, J.	LARC/Tenney, D. R.	47-Materials Engr
Houska, C. R.	LARC/Tompkins, S. S.	

NSG 1546 **Virginia Polytechnic Institute** **3748**
Improved modeling and solution procedures for nonlinear analysis

Period	*Obligations*	
07/01/78-06/30/79	FY78: $34,000	TOTAL: $34,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kamat, M. P.	LARC/Hayduk, R. J.	49-Engr, NEC
	LARC/Thomson, R. G.	

NSG 2038 **Virginia Polytechnic Institute** **3749**
Fundamental investigation of failure of fiber composites

Period	*Obligations*	
10/01/74-10/01/79	FY78: $85,975	TOTAL: $402,880
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Brinson, H. F.	ARC/Nelson, H. G.	47-Materials Engr

NSG 2301 **Virginia Polytechnic Institute** **3750**
Near-wall similarity in three-dimensional turbulent flows

Period	*Obligations*	
04/01/78-03/31/79	FY78: $52,468	TOTAL: $52,468
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Pierce, F. J.	ARC/Marvin, J. G.	41-Aero Engr
	ARC/Rubesin, M. W.	

NSG 3073 **Virginia Polytechnic Institute** **3751**
Studies of internal flowfields of high throat-Mach-number quiet engine inlets

Period	*Obligations*	
10/01/75-08/14/79	FY78: $33,117	TOTAL: $63,122
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Jakubowski, A. K.	LERC/Shaw, R. J.	41-Aero Engr
Scher, J. A.		

NSG 3204 **Virginia Polytechnic Institute** **3752**
Ion beam surface modification: Surface analysis and adhesion

Period	*Obligations*	
06/07/78-06/06/79	FY78: $9,875	TOTAL: $9,875
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Dwight, D. W.	LERC/Sovey, J. S.	47-Materials Engr
	LERC/Banks, B. A.	

NSG 5221 **Virginia Polytechnic Institute** **3753**
High brightness quasars SAS-3

Period	*Obligations*	
02/01/78-01/31/79	FY78: $6,423	TOTAL: $6,423
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Dennison, B. K.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

VIRGINIA (Continued)

NGL 47-014-009 **Virginia State College** **3754**
Numerical treatment of sound propagation through a duct

Period	*Obligations*	
06/29/73-08/31/79	FY78:	TOTAL: $79,442
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Agrawal, K. M.	LARC/Lansing, D. L.	41-Aero Engr

NSG 1342 **Virginia State College** **3755**
Material science and solid state physics studies with positive muon spin precession

Period	*Obligations*	
01/01/77-09/30/79	FY78:	TOTAL: $33,521
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Stronach, C. E.	LARC/Singh, J. J.	13-Physics

WASHINGTON

NAS 1-9694 **University of Washington** **3756**
Participation in the science planning for the Viking 1975 missions in the area of meteorology

Period	*Obligations*	
04/27/70-09/30/78	FY78: $54,197	TOTAL: $569,256
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Leovy, C. B.	LARC/Williams, T. S., Jr. LARC/Glenny, W. R.	31-Atmos Sci

NAS 1-14341 **University of Washington** **3757**
Science support for the limb infrared monitor of the stratosphere experiment

Period	*Obligations*	
04/12/76-10/31/78	FY78: $18,000	TOTAL: $45,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Leovy, C. B.	LARC/Russell, J. M., III LARC/James, R. L., Jr.	31-Atmos Sci

NAS 5-22379 **University of Washington** **3758**
Study of the HR diagram to find the boundary line for effective hydrogen convection zones

Period	*Obligations*	
04/09/75-03/31/78	FY78:	TOTAL: $29,566
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bohm-Vitense, E.	GSFC/Brandt, J.	11-Astronomy

NAS 5-25125 **University of Washington** **3759**
Hydrology study of Arctic coastal plain of Alaska

Period	*Obligations*	
07/14/78-09/01/78	FY78: $5,660	TOTAL: $5,660
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Trowbridge, R.	GSFC/Hall, D.	19-Phys Sci, NEC

NAS 8-33148 **University of Washington** **3760**
Atmospheric cloud physics laboratory gas scavenging experiment

Period	*Obligations*	
07/07/78-01/15/79	FY78: $14,647	TOTAL: $14,647
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hobbs, P. V.	MSFC/Fallon, R. A. MSFC/Smith, R. E.	31-Atmos Sci

NAS 9-13029 **University of Washington** **3761**
Total body calcium analysis

Period	*Obligations*	
06/29/72-11/30/77	FY78:	TOTAL: $302,485
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Nelp, W. B.	JSC/Rambaut, P. C.	59-Life Sci, NEC

NAS 9-13743 **University of Washington** **3762**
Scanning electron microscope analysis

Period	*Obligations*	
11/21/73-04/30/79	FY78:	TOTAL: $21,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Brownlee, D. E.	JSC/Horz, F.	32-Geological Sci

NCA 2-850801 **University of Washington** **3763**
Analysis of shrinkage in reusable surface insulation

Period	*Obligations*	
01/01/78-12/31/78	FY78: $3,520	TOTAL: $3,520
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mueller, J. I.	ARC/Goldstein, H.E.	47-Materials Engr

NCA 2-850802 **University of Washington** **3764**
Development of a prototype Mars meteorology station

Period	*Obligations*	
05/01/78-10/31/78	FY78: $9,000	TOTAL: $9,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Tillman, J. E.	ARC/Borucki, W. J.	31-Atmos Sci

NGL 48-002-004 **University of Washington** **3765**
Multidisciplinary research in materials sciences with emphasis on investigation of inorganic nonmetallic ceramic materials

Period	*Obligations*	
06/28/73-05/31/80	FY78: $350,000	TOTAL: $4,369,171
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Mueller, J. I.	HQ-RW/Gangler, J. J. HQ-RW/Deutsch, G. C.	47-Materials Engr

NGL 48-002-035 **University of Washington** **3766**
An experimental investigation of wind tunnel test limits for V/STOL type vehicles in wind tunnels with curved walls

Period	*Obligations*	
08/19/66-06/30/78	FY78:	TOTAL: $185,428
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Rae, W. H.	LARC/Heyson, H. H.	41-Aero Engr

NGL 48-002-044 University of Washington 3767
Generation of coherent radiation and the use of intense coherent radiation for generation of plasmas

Period	Obligations	
05/19/67-11/14/78	FY78: $269,000	TOTAL: $956,900
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hertzberg, A.	HQ-RR/Schwenk, F. C. ARC/Billman, K. W.	13-Physics

NGL 48-002-047 University of Washington 3768
Interaction shock wave and turbulent boundary layer

Period	Obligations	
09/16/67-06/30/80	FY78:	TOTAL: $419,659
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Childs, M. E.	ARC/Chapman, G. T. ARC/Presley, L. L.	41-Aero Engr

NGR 48-002-033 University of Washington 3769
Study of interplanetary dust

Period	Obligations	
10/17/66-02/28/77	FY78:	TOTAL: $338,128
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Hodge, P. W. Brownlee, D. E.	HQ-SL/French, B. M. HQ-SL/Quaide, W. L.	11-Astronomy

NGR 48-002-141 University of Washington 3770
Research program in aeronautics & air transportation

Period	Obligations	
05/10/72-09/30/79	FY78:	TOTAL: $273,485
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Childs, M. E. Gessner, F. B.	ARC/Lee, G. ARC/Watson, E. C.	41-Aero Engr

NGR 48-002-142 University of Washington 3771
Analysis of continuum channel light curves

Period	Obligations	
10/03/72-12/31/78	FY78:	TOTAL: $107,031
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Greene, T. F.	HQ-SL/Brunk, W. E.	11-Astronomy

NSG 2176 University of Washington 3772
Wind shear detection by total energy method for use in landing of aircraft

Period	Obligations	
10/01/76-09/30/79	FY78: $15,000	TOTAL: $90,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Joppa, R. G.	ARC/Smith, D. W.	41-Aero Engr

NSG 2228 University of Washington 3773
Stratospheric planetary waves

Period	Obligations	
08/01/77-07/31/79	FY78: $86,659	TOTAL: $185,472
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Holton, J. R. Leovy, C. B.	ARC/Young, R. E.	31-Atmos Sci

NSG 2260 University of Washington 3774
Study of a minimum interference wind tunnel for high lift wings in three dimensions

Period	Obligations	
10/01/77-12/01/78	FY78: $73,953	TOTAL: $73,953
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Joppa, R. G.	ARC/Corsiglia, V. R.	41-Aero Engr

NSG 3152 University of Washington 3775
A design manual for stirling engines

Period	Obligations	
06/01/77-01/31/78	FY78: $9,000	TOTAL: $48,513
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Martini, W. R.	LERC/Valentine, H. H.	46-Mech Engr

NSG 3194 University of Washington 3776
Stirling engine design manual

Period	Obligations	
05/01/78-10/30/78	FY78: $16,439	TOTAL: $16,439
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Martini, W. R.	LERC/Valentine, H. H. LERC/Tew, R. C.	46-Mech Engr

NSG 5039 University of Washington 3777
Stratospheric long waves

Period	Obligations	
12/01/74-09/30/77	FY78:	TOTAL: $83,290
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Leovy, C. B. Webster, P. J.	GSFC/Eberstein, I.	31-Atmos Sci

NSG 5240 University of Washington 3778
Line identification in A stars: Termination of hydrogen convection

Period	Obligations	
03/01/78-02/28/79	FY78: $19,000	TOTAL: $19,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bohm-Vitense, E.	GSFC/Boggess, A. GSFC/West, D. K.	11-Astronomy

NSG 5283 University of Washington 3779
Field-aligned particle fluxes and parallel electric potential

Period	Obligations	
07/01/78-06/30/79	FY78: $21,732	TOTAL: $21,732
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lin, C. S.	GSFC/Spencer, N. W.	31-Atmos Sci

NSG 7085 University of Washington 3780
Dynamics of planetary atmospheres

Period	Obligations	
07/01/74-10/01/78	FY78:	TOTAL: $143,200
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Leovy, C. B.	HQ-SL/Fellows, R. F. HQ-SL/Brunk, W. E.	31-Atmos Sci

WASHINGTON (Continued)

NSG 7173 — **University of Washington** — **3781**
Application of spectral reflectance of lunar samples to telescopic spectra of unvisited parts of the moon

Period	*Obligations*	
07/01/75-01/31/81	FY78: $27,530	TOTAL: $150,562
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Adams, J. B.	HQ-SL/Goldstein, B. E. HQ-SL/Quaide, W. L.	32-Geological Sci

NSG 7174 — **University of Washington** — **3782**
Visible and near-infrared reflectance spectroscopy

Period	*Obligations*	
07/01/75-01/31/79	FY78: $3,620	TOTAL: $132,274
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Adams, J. B.	HQ-SL/Quaide, W. L. HQ-SL/French, B. E.	32-Geological Sci

NSG 7313 — **University of Washington** — **3783**
Crystal-liquid distribution coefficients for selected elements

Period	*Obligations*	
03/01/77-02/28/79	FY78: $43,159	TOTAL: $71,814
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
McCallum, I. S.	HQ-SL/Quaide, W. L. HQ-SL/French, B. E.	32-Geological Sci

NSG 7318 — **University of Washington** — **3784**
Analysis of data on very high energy galactic electrons

Period	*Obligations*	
12/01/76-11/30/78	FY78: $24,900	TOTAL: $38,061
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lord, J. J.	HQ-SC/Opp, A. G. HQ-SC/Fishman, G. J.	11-Astronomy

NSG 7448 — **University of Washington** — **3785**
Mars spectral photometry and surface composition

Period	*Obligations*	
02/01/78-09/30/78	FY78: $9,681	TOTAL: $9,681
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Adams, J. B.	HQ-SL/Dwornik, S. E. HQ-SL/Boyce, J. M.	32-Geological Sci

NSG 9032 — **University of Washington** — **3786**
Reflectance spectroscopy of lunar samples

Period	*Obligations*	
07/01/75-01/31/79	FY78: $49,881	TOTAL: $229,311
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Adams, J. D.	JSC/Harris, J. W.	32-Geological Sci

NSG 9052 — **University of Washington** — **3787**
A study of interplanetary dust

Period	*Obligations*	
03/01/77-02/28/79	FY78: $80,300	TOTAL: $155,300
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Brownlee, D. E.	JSC/Harris, J. W.	31-Atmos Sci

NAS 5-25063 — **Walla Walla College** — **3788**
Study of high speed complex number algorithms

Period	*Obligations*	
06/12/78-08/12/79	FY78: $11,864	TOTAL: $11,864
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Heisler, R.	GSFC/Schmidt, R. L. GSFC/Keating, T., Jr.	45-Elec Engr

NCA 2-840801 — **Washington State University** — **3789**
Chemical reactions on supported metal particles

Period	*Obligations*	
06/01/78-05/31/80	FY78: $13,196	TOTAL: $13,196
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Dickinson, J. T.	ARC/Poppa, H. R.	13-Physics

NSG 7214 — **Washington State University** — **3790**
Atmospheric measurements of nitrous oxide and the halocarbons

Period	*Obligations*	
02/01/76-04/30/79	FY78: $28,000	TOTAL: $200,168
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cronn, D. Harsch, D. E. Robinson, E.	HQ-ST/Tilford, S. G. HQ-ST/Newton, G. P.	31-Atmos Sci

NCA 2-862801 — **Western Washington University** — **3791**
To investigate data use and data processing practice of agencies or firms in the Pacific Northwest

Period	*Obligations*	
06/20/78-12/31/78	FY78: $950	TOTAL: $950
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Peterson, G.	ARC/Briggs, B. R.	39-Env Sci, NEC

WEST VIRGINIA

NSG 1412 — **West Virginia University** — **3792**
Generalization of analytical tools for helicopter rotor airfoils

Period	*Obligations*	
04/15/77-08/14/78	FY78:	TOTAL: $20,466
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Gibbs, E. H.	LARC/Morris, C. E., Jr.	41-Aero Engr

NSG 3134 — **West Virginia University** — **3793**
Development of a fluidized bed computer model

Period	*Obligations*	
12/01/76-11/30/78	FY78:	TOTAL: $53,300
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Wen, C. Y.	LERC/Phillips, B. R.	43-Chem Engr

WISCONSIN

NAS 8-32901 **Beloit College** **3794**
Scientific investigations in support of the space telescope project

Period	*Obligations*	
02/22/78-02/22/84	FY78: $69,100	TOTAL: $69,100
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Schroeder, D. J.	MSFC/O'Dell, C. R.	11-Astronomy

NAS 9-15711 **Marquette University** **3795**
Alterations in skeletal muscle with disuse atrophy

Period	*Obligations*	
09/21/78-10/01/80	FY78: $40,000	TOTAL: $40,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fitts, R. H.	JSC/Rambaut, P. C.	59-Life Sci, NEC

NAS 1-14136 **University of Wisconsin - Madison** **3796**
Laser radar for meteorological measurements

Period	*Obligations*	
09/11/75-03/31/79	FY78: $45,255	TOTAL: $585,255
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Weinman, J. A.	LARC/Northam, G. B.	31-Atmos Sci
Parent, R. J.	LARC/Remsberg, E.	
Roesler, F. L.		

NAS 2-8813 **University of Wisconsin - Madison** **3797**
Design and development of the Pioneer/Venus net flux radiometer

Period	*Obligations*	
05/10/75-08/31/78	FY78: $120,464	TOTAL: $960,464
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Suomi, V. E.	ARC/Hall, C. F.	31-Atmos Sci
Sromousky, L. A.	ARC/Polaski, L. J.	

NAS 2-9480 **University of Wisconsin - Madison** **3798**
Pioneer/Venus data analysis of net flux radiometer experiment

Period	*Obligations*	
09/27/77-11/30/78	FY78: $44,665	TOTAL: $89,665
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Suomi, V. E.	ARC/Hall, C. F.	31-Atmos Sci

NAS 5-20974 **University of Wisconsin - Madison** **3799**
Navigation model for ATS satellites

Period	*Obligations*	
03/18/75-11/30/77	FY78:	TOTAL: $89,790
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Suomi, V. E.	GSFC/Squires, R. K.	13-Physics
Kuhlow, W. W.		

NAS 5-21965 **University of Wisconsin - Madison** **3800**
Development of an IR temperature sounder for SMS spacecraft

Period	*Obligations*	
08/01/73-10/15/81	FY78: $530,930	TOTAL: $1,024,533
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Suomi, V. E.	GSFC/Montgomery, H. E.	31-Atmos Sci

NAS 5-22349 **University of Wisconsin - Madison** **3801**
High resolution spectroscopy for a one meter class UV-optical telescope for Spacelab astronomy missions

Period	*Obligations*	
04/23/75-12/31/78	FY78: $3,000	TOTAL: $16,247
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Anderson, C. M.	GSFC/Wilson, L.	11-Astronomy

NAS 5-22410 **University of Wisconsin - Madison** **3802**
Reduction and analysis of data from OSO-1 soft X-ray background experiment

Period	*Obligations*	
06/26/75-09/30/79	FY78: $27,913	TOTAL: $540,788
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kraushaar, W. L.	GSFC/Gemmell, J. D.	31-Atmos Sci

NAS 5-23285 **University of Wisconsin - Madison** **3803**
Operation and data handling requirements for large space telescope

Period	*Obligations*	
09/07/73-12/31/76	FY78:	TOTAL: $50,647
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bless, R. C.	GSFC/Sobieski, S.	11-Astronomy
	GSFC/Meese, K. J.	

NAS 5-23462 **University of Wisconsin - Madison** **3804**
Global atmospheric research project

Period	*Obligations*	
06/07/76-03/28/79	FY78: $80,000	TOTAL: $203,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Suomi, V. E.	GSFC/Greaves, J. R.	31-Atmos Sci

NAS 5-23500 **University of Wisconsin - Madison** **3805**
Continued operation of a biomedical applications team

Period	*Obligations*	
06/21/76-02/28/79	FY78:	TOTAL: $263,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Houston, N.	GSFC/Friedman, D.S.	53-Other Medical
Renner, J. H.		

NAS 5-23706 **University of Wisconsin - Madison** **3806**
Study of the economic benefits of meteorological satellite data

Period	*Obligations*	
08/30/76-08/29/80	FY78: $20,000	TOTAL: $266,912
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Suomi, V. E.	GSFC/Hasler, A. F.	31-Atmos Sci
Suchman, D.	GSFC/Shenk, W. E.	

NAS 5-24230 **University of Wisconsin - Madison** **3807**
Remotely monitor precipitation by analyzing data from Nimbus scanning microwave radiometers

Period	*Obligations*	
07/29/77-01/28/79	FY78:	TOTAL: $30,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Weinman, J. A.	GSFC/Theon, J. S.	31-Atmos Sci

NAS 5-24385 University of Wisconsin - Madison 3808
Operation of a biomedical applications team

Period	Obligations	
12/19/77-02/19/80	FY78: $215,000	TOTAL: $215,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Fetzner, W. N. Huston, N. E.	GSFC/Friedman, D.S.	53-Other Medical

NAS 5-24487 University of Wisconsin - Madison 3809
High speed photometer for the space telescope printer

Period	Obligations	
03/08/78-12/31/78	FY78: $352,264	TOTAL: $352,264
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Bless, R. C.	GSFC/White, R. A.	11-Astronomy

NAS 5-25148 University of Wisconsin - Madison 3810
Technical support to the first GARP global experiment special effort

Period	Obligations	
08/18/78-06/18/79	FY78: $90,000	TOTAL: $90,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Suomi, V. E.	GSFC/Greaves, J. R. GSFC/Halem, M.	31-Atmos Sci

NAS 9-15580 University of Wisconsin - Madison 3811
Vitamin D metabolites and bone demineralization

Period	Obligations	
04/01/78-12/31/78	FY78: $40,000	TOTAL: $40,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Schnoes, H. K.	JSC/Rambaut, P. C.	53-Other Medical

NCA 2-865701 University of Wisconsin - Madison 3812
Influence of hypodynamia on the serum levels and production of the active metabolites of vitamin D in the rat

Period	Obligations	
08/01/76-12/31/79	FY78:	TOTAL: $32,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Deluca, H.	ARC/Holton, E. M.	51-Biology

NGL 50-002-013 University of Wisconsin - Madison 3813
Investigations and studies of ultraviolet stellar spectra and associated instrumentation

Period	Obligations	
05/20/64-04/30/81	FY78: $210,000	TOTAL: $2,755,420
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Code, A. D.	GSFC/Bissell, E. E. HQ-SC/Rosendhal, J. D.	11-Astronomy

NGL 50-002-044 University of Wisconsin - Madison 3814
Research in cosmic and solar physics

Period	Obligations	
10/25/65-04/30/81	FY78: $180,000	TOTAL: $2,172,626
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kraushaar, W. L.	GSFC/Bissell, E. E. HQ-SC/Opp, A. G.	11-Astronomy

NGL 50-002-127 University of Wisconsin - Madison 3815
Multidisciplinary research in space science engineering

Period	Obligations	
12/19/69-07/31/81	FY78: $185,000	TOTAL: $1,737,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Clapp, J. L.	HQ-ET/Vitale, J. A.	39-Env Sci, NEC

NGR 50-002-051 University of Wisconsin - Madison 3816
Applications of the direct photon absorption techniques for measuring bone-mineral content

Period	Obligations	
09/01/66-10/01/78	FY78: $42,072	TOTAL: $611,236
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cameron, J. R. Mazess, R. B.	ARC/Young, D. R.	52-Clinical Med

NGR 50-002-162 University of Wisconsin - Madison 3817
Solar wind physics

Period	Obligations	
01/26/71-12/31/78	FY78: $25,000	TOTAL: $377,463
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Scherb, F.	HQ-ST/Cauffman, D. P. HQ-ST/Schmerling, E. R.	13-Physics

NGR 50-002-189 University of Wisconsin - Madison 3818
Cloud image processing for planetary flybys

Period	Obligations	
01/19/72-09/30/78	FY78:	TOTAL: $116,297
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Suomi, V. E.	HQ-SL/Murphy, R. E. HQ-SL/Brunk, W. E.	31-Atmos Sci

NGR 50-002-191 University of Wisconsin - Madison 3819
Elimination of microbial flora and its effect on immunity to infection

Period	Obligations	
02/04/72-12/31/78	FY78:	TOTAL: $170,742
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Balish, E.	ARC/Mandel, A. D.	52-Clinical Med

NGR 50-002-215 University of Wisconsin - Madison 3820
Investigation of cloud displacement data in a sophisticated model of the atmosphere

Period	Obligations	
03/01/73-11/30/77	FY78: $9,309	TOTAL: $168,743
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Suomi, V. E.	GSFC/Halem, M.	31-Atmos Sci

NSG 1196 University of Wisconsin - Madison 3821
Statistical modeling and inference for orientation data

Period	Obligations	
09/01/75-11/30/77	FY78:	TOTAL: $39,995
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Johnson, R. A. Bhattacharyya, G. K.	LARC/Campbell, J. W.	21-Mathematics

NSG 2104 **University of Wisconsin - Madison** **3822**
Viral etiology and epidemiology of respiratory infraction in an isolated Antarctic station

Period	*Obligations*	
09/01/75-11/30/78	FY78: $40,000	TOTAL: $120,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Dick, E. C.	ARC/Mandel, A. D.	52-Clinical Med

NSG 5100 **University of Wisconsin - Madison** **3823**
Ultraviolet studies with the Princeton telescope aboard the copernicus satellite

Period	*Obligations*	
06/01/76-05/31/78	FY78:	TOTAL: $10,578
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Savage, B. D.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5126 **University of Wisconsin - Madison** **3824**
Scientific investigations of tropical wind, energy conversion and reference level experiment

Period	*Obligations*	
09/07/76-09/06/77	FY78:	TOTAL: $50,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Suomi, V. E.	GSFC/Theon, J. S.	31-Atmos Sci

NSG 5152 **University of Wisconsin - Madison** **3825**
Research of clouds and ice in the planetary scale circulation and in climate

Period	*Obligations*	
01/01/77-12/31/80	FY78: $48,790	TOTAL: $146,639
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Houghton, D. D. Suomi, V. E.	GSFC/Halem, M.	31-Atmos Sci

NSG 5180 **University of Wisconsin - Madison** **3826**
Analysis of the ultraviolet line profiles in the Wolf-Rayet Star HD 50896

Period	*Obligations*	
06/20/77-12/31/78	FY78:	TOTAL: $9,993
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cassinelli, J. P.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5181 **University of Wisconsin - Madison** **3827**
A source of interstellar abundances/ultraviolet studies of the interstellar medium, hot stars and cosmic X-ray sources

Period	*Obligations*	
07/01/77-06/30/79	FY78:	TOTAL: $17,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Savage, B. D.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5223 **University of Wisconsin - Madison** **3828**
Research of the effect of synoptic scale processes in global circulation models modelling

Period	*Obligations*	
01/16/78-01/15/79	FY78: $24,000	TOTAL: $24,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Herman, G. F. Johnson, D. R.	GSFC/Halem, M.	31-Atmos Sci

NSG 5241 **University of Wisconsin - Madison** **3829**
Interstellar Lyman alpha observations with the IUE satellite

Period	*Obligations*	
02/15/78-02/14/79	FY78: $19,500	TOTAL: $19,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Savage, B. D.	GSFC/Boggess, A. GSFC/West, D. K.	11-Astronomy

NSG 5242 **University of Wisconsin - Madison** **3830**
High resolution spectral observations with the IUE satellite

Period	*Obligations*	
02/15/78-02/14/79	FY78: $16,000	TOTAL: $16,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Doherty, L. R.	GSFC/Boggess, A. GSFC/West, D. K.	11-Astronomy

NSG 5251 **University of Wisconsin - Madison** **3831**
Investigation of computer processing method of multiple geostationary satellite transmissions for cloud height determination

Period	*Obligations*	
03/01/78-02/28/79	FY78: $34,864	TOTAL: $34,864
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Suomi, V. E. Stremler, F. G.	GSFC/Minzner, R. A. GSFC/Shenk, W. E.	31-Atmos Sci

NSG 5252 **University of Wisconsin - Madison** **3832**
Optimum employment of satellite

Period	*Obligations*	
03/15/78-03/14/79	FY78: $61,492	TOTAL: $61,492
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Horn, L. H.	GSFC/Halem, M.	31-Atmos Sci

NSG 7050 **University of Wisconsin - Madison** **3833**
Data analysis of OAO-2 ultraviolet spectrophotometry

Period	*Obligations*	
07/01/74-12/31/78	FY78: $36,333	TOTAL: $398,533
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Code, A. D.	HQ-SC/Roman, N. G. HQ-SC/Rosendhal, J. D.	11-Astronomy

NSG 7133 **University of Wisconsin - Madison** **3834**
Ultraviolet studies with the Dutch national satellite

Period	*Obligations*	
06/01/75-08/31/77	FY78:	TOTAL: $8,717
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Savage, B. D.	HQ-SC/Rosendhal, J. D.	11-Astronomy

NSG 7215 **University of Wisconsin - Madison** **3835**
Vacuum ultraviolet photon excitation and electron ejection from surfaces

Period 02/01/76-01/31/79 *Obligations* FY78: $31,908 TOTAL: $112,555
Prin. Invest. Taylor, J. W.
NASA Tech. Officer HQ-SL/Quaide, W. L.; HQ-SL/French, B. E.
CASE Category 32-Geological Sci

NSG 7390 **University of Wisconsin - Madison** **3836**
Constant level balloon-satellite montoring program for the stratosphere

Period 11/15/77-11/14/78 *Obligations* FY78: $30,000 TOTAL: $30,000
Prin. Invest. Suomi, V. E.
NASA Tech. Officer HQ-ST/Tilford, S. G.; HQ-ST/Simon, N. K.
CASE Category 31-Atmos Sci

NGR 50-007-001 **University of Wisconsin - Milwaukee** **3837**
Dynamic response and flow visualization analyses for helicopter rotor blades

Period 12/02/70-12/31/78 *Obligations* FY78: TOTAL: $289,825
Prin. Invest. Bratanow, T.
NASA Tech. Officer LARC/Young, W. H., Jr.
CASE Category 41-Aero Engr

NGR 50-009-001 **University of Wisconsin - Parkside** **3838**
Identification, distribution and significance of forms on Mars

Period 00/00/00-09/30/78 *Obligations* FY78: $8,309 TOTAL: $29,581
Prin. Invest. Smith, E. I.
NASA Tech. Officer HQ-SL/Dwornik, S. E.; HQ-SL/Boyce, J. M.
CASE Category 32-Geological Sci

WYOMING

NAS 1-13797 **University of Wyoming** **3839**
Stratospheric aerosol measurement instrument

Period 01/29/75-04/28/79 *Obligations* FY78: $232,732 TOTAL: $3,160,000
Prin. Invest. Pepin, T. J.
NASA Tech. Officer LARC/Hedgepeth, K. D.; LARC/Mauldin, L. E., III
CASE Category 31-Atmos Sci

NAS 1-14373 **University of Wyoming** **3840**
Science support for the Nimbus G stratospheric aerosol measurement experiment

Period 04/02/76-09/30/79 *Obligations* FY78: $68,131 TOTAL: $141,131
Prin. Invest. Pepin, T. J.
NASA Tech. Officer LARC/McCormick, M. P.; LARC/McMaster, L. R.
CASE Category 31-Atmos Sci

NAS 1-14931 **University of Wyoming** **3841**
Stratospheric aerosol and gas experiment

Period 07/19/77-09/30/79 *Obligations* FY78: $45,000 TOTAL: $60,000
Prin. Invest. Pepin, T. J.
NASA Tech. Officer LARC/McMaster, L. R.; LARC/McCormick, M. P.
CASE Category 31-Atmos Sci

NAS 1-15377 **University of Wyoming** **3842**
Balloon-borne aerosol measurements: Ground truth for SAM II

Period 05/04/78-03/03/79 *Obligations* FY78: $40,000 TOTAL: $40,000
Prin. Invest. Hofmann, D. J.; Rosen, J. M.
NASA Tech. Officer LARC/McMaster, L. R.; LARC/McCormick, M. P.
CASE Category 31-Atmos Sci

NAS 8-32067 **University of Wyoming** **3843**
Aerosol and nucleation research in support of NASA cloud physics experiment in space

Period 05/10/76-07/01/78 *Obligations* FY78: TOTAL: $121,236
Prin. Invest. Vali, G.
NASA Tech. Officer MSFC/Schrick, B. J.; MSFC/Smith, R. E.
CASE Category 31-Atmos Sci

NAS 8-32486 **University of Wyoming** **3844**
Space processing applications rocket: Charged water-drop oscillations

Period 04/30/77-03/31/79 *Obligations* FY78: TOTAL: $25,307
Prin. Invest. Saunders, C.
NASA Tech. Officer MSFC/Reeves, F. A.; MSFC/Chassay, R. P.
CASE Category 47-Materials Engr

NAS 8-33150 **University of Wyoming** **3845**
Atmospheric cloud physics laboratory ice forming experiment preliminary definition

Period 08/07/78-01/15/79 *Obligations* FY78: $15,198 TOTAL: $15,198
Prin. Invest. Vali, G.; Knight, C. A.
NASA Tech. Officer MSFC/Fallon, R. A.; MSFC/Smith, R. E.
CASE Category 31-Atmos Sci

NSG 1518 **University of Wyoming** **3846**
Preliminary Aerosol Measurement (PAM II) data reduction

Period 04/15/78-04/14/79 *Obligations* FY78: $27,838 TOTAL: $27,838
Prin. Invest. Pepin, T. J.
NASA Tech. Officer LARC/McCormick, M. P.; LARC/Chu, W. P.
CASE Category 31-Atmos Sci

WYOMING (Continued)

NSG 3217 — **University of Wyoming** — **3847**
Energy absorption mechanisms during crack propagation in metal matrix composites

Period: 08/01/78-07/31/79
Obligations: FY78: $30,114 TOTAL: $30,114
Prin. Invest.: Adams, D. F.
NASA Tech. Officer: LERC/DiCarlo, J. A.; LERC/Grimes, H. H.
CASE Category: 47-Materials Engr

NSG 7207 — **University of Wyoming** — **3848**
Theoretical investigation of the equilibrium distribution of space shuttle alumina aerosol effluent

Period: 02/01/76-06/30/77
Obligations: FY78: TOTAL: $65,091
Prin. Invest.: Hofmann, D. J.
NASA Tech. Officer: HQ-ST/King, J., Jr.
CASE Category: 31-Atmos Sci

NSG 7349 — **University of Wyoming** — **3849**
Measurements of the natural background of condensation nuclei at high altitude for assessment of future space shuttle effluent effect

Period: 07/01/77-06/30/79
Obligations: FY78: $50,000 TOTAL: $100,985
Prin. Invest.: Hofmann, D. J.; Rosen, J. M.
NASA Tech. Officer: HQ-ST/Kakar, R. K.; HQ-ST/Tilford, S. G.
CASE Category: 31-Atmos Sci

AUSTRALIA

NSG 7272 — **University of Sydney** — **3850**
Rarefied flow field analysis

Period: 07/01/76-06/30/79
Obligations: FY78: TOTAL: $10,000
Prin. Invest.: Bird, G. A.
NASA Tech. Officer: LARC/Melfi, L. T., Jr.; LARC/Outlaw, R. A.
CASE Category: 13-Physics

CANADA

NSG 7219 — **University of Toronto** — **3851**
Experimental evaluation of the tensor polynomial failure criterion for designing composite materials

Period: 09/01/75-12/31/77
Obligations: FY78: TOTAL: $16,356
Prin. Invest.: Tennyson, R. C.
NASA Tech. Officer: LARC/Foye, R. L.; LARC/Pride, R. A.
CASE Category: 47-Materials Engr

NSG 7409 — **University of Toronto** — **3852**
Application of the cubic strength criterion to the failure analysis of composite structures

Period: 03/01/78-02/28/80
Obligations: FY78: $22,880 TOTAL: $22,880
Prin. Invest.: Tennyson, R. C.
NASA Tech. Officer: LARC/Baker, D. J.; LARC/Pride, R. A.
CASE Category: 47-Materials Engr

NGR 52-134-005 — **York University** — **3853**
Studies of production and reaction processes of O (2D2) of interest in the earth's atmosphere

Period: 04/26/73-12/31/78
Obligations: FY78: TOTAL: $119,761
Prin. Invest.: Schiff, H. I.; Dudley, W. W.; Ridley, B. A.
NASA Tech. Officer: HQ-ST/Newton, G. P.; HQ-ST/Tilford, S. G.
CASE Category: 31-Atmos Sci

NSG 7223 — **York University** — **3854**
Studies of the spectrum chlorine monoxide in the stratosphere

Period: 05/01/76-04/30/79
Obligations: FY78: $120,234 TOTAL: $160,234
Prin. Invest.: Nicholls, R. W.
NASA Tech. Officer: ARC/Cooper, D. M.; ARC/Arnold, J. O.
CASE Category: 31-Atmos Sci

CHILE

NAS 5-1925 — **University of Chile** — **3855**
Maintenance & operation of minitrack facilities

Period: 09/21/62-09/30/78
Obligations: FY78: $4,791,610 TOTAL: $30,899,337
Prin. Invest.: Danyau, C. R.
NASA Tech. Officer: GSFC/Lafleur, W.; GSFC/Force, C.
CASE Category: 99-Multi-Discip

GREAT BRITAIN

NSG 7172 — **University of Southhampton** — **3856**
Self-streamlining of the test section of a transonic wind tunnel

Period: 10/01/75-09/31/79
Obligations: FY78: $124,700 TOTAL: $154,786
Prin. Invest.: Goodyer, M. J.
NASA Tech. Officer: LARC/Kilgore, R. A.; LARC/Ladson, C. L.
CASE Category: 41-Aero Engr

ISRAEL

NSG 7072 **Israel Institute of Technology** **3857**
Flutter suppression and gust alleviation using active controls

Period	*Obligations*	
08/01/74-09/30/77	FY78:	TOTAL: $26,512
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Nissim, E.	LARC/Abel, I.	41-Aero Engr
	LARC/Bland, S. R.	

NSG 7083 **Israel Institute of Technology** **3858**
Inelastic behavior of advanced composite materials (boron and graphite epoxy)

Period	*Obligations*	
08/01/74-03/31/78	FY78:	TOTAL: $24,535
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Weller, T.	LARC/Bush, H. G.	41-Aero Engr

NSG 7317 **Israel Institute of Technology** **3859**
Study of radial face seal mechanism of operation

Period	*Obligations*	
04/01/77-03/31/79	FY78:	TOTAL: $20,200
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Etsion, I.	LERC/Ludwig, L. P.	46-Mech Engr
	LERC/Anderson, W. J.	

NSG 7373 **Israel Institute of Technology** **3860**
Study of active control systems for application to supersonic cruise aircraft

Period	*Obligations*	
11/01/77-10/31/79	FY78: $25,032	TOTAL: $25,032
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Nissim, E.	LARC/Abel, I.	41-Aero Engr
	LARC/Doggett, R. V., Jr.	

NSG 7311 **Tel-Aviv University** **3861**
Flush mounted separation detector development, analysis and optimization of performances

Period	*Obligations*	
06/01/77-05/31/79	FY78:	TOTAL: $13,998
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Brosh, A.	ARC/Mateer, G. G.	41-Aero Engr
	ARC/Marvin, J. G.	

NETHERLANDS

NSG 7264 **University of Leiden** **3862**
Maps of Jovian radio emission

Period	*Obligations*	
09/01/76-01/14/79	FY78: $26,389	TOTAL: $76,389
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
VanDerLaan, H.	ARC/Grant, T. L.	11-Astronomy
	ARC/Vojvodich, N. S.	

NEW ZEALAND

NSG 7192 **University of Canterbury** **3863**
Study of the propagation of sound in nonuniform duct

Period	*Obligations*	
07/01/75-07/01/78	FY78:	TOTAL: $29,600
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Eversman, W.	LERC/Rice, E. J.	46-Mech Engr
	LERC/Feiler, C. E.	

PERU

NASW 7 **University of Peru** **3864**
Operation of tracking station

Period	*Obligations*	
12/01/68-06/01/79	FY78:	TOTAL: $3,300,512
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Unavailable	GSFC/Christie, C. J.	49-Engr, NEC

NASA'S UNIVERSITY PROGRAM
APPENDIX A
CROSS INDEX BY GRANT/CONTRACT NUMBER

Entries are arranged alphanumerically. Grants are identifiable by prefix letters NGF, NGL, NGR, NGT and NSG. All other prefixes denote contracts.

GRANT/ CONTRACT NUMBER	ACC NO.
DEN 3 50	1076
DEN 3 65	3708
DEN 3 73	1929
DEN 8 1	3491
NAS 1-9680	3307
NAS 1-9682	1282
NAS 1-9683	2890
NAS 1-9684	2408
NAS 1-9685	3466
NAS 1-9691	2409
NAS 1-9692	1283
NAS 1-9693	1862
NAS 1-9694	3756
NAS 1-9701	1284
NAS 1-9702	2410
NAS 1-9703	1160
NAS 1-9705	2762
NAS 1-10492	2367
NAS 1-10493	2993
NAS 1-11854	1235
NAS 1-11855	2823
NAS 1-12311	1161
NAS 1-12705	3581
NAS 1-12754	3681
NAS 1-13129	2145
NAS 1-13175	3709
NAS 1-13502	2763
NAS 1-13797	3839
NAS 1-13884	3710
NAS 1-13889	2717
NAS 1-14034	3606
NAS 1-14136	3796
NAS 1-14160	3495
NAS 1-14193	3630
NAS 1-14332	1093
NAS 1-14341	3757
NAS 1-14351	1930
NAS 1-14373	3840
NAS 1-14393	3215
NAS 1-14394	2565
NAS 1-14406	3106
NAS 1-14507	3620
NAS 1-14538	1649
NAS 1-14605	1784
NAS 1-14621	1217
NAS 1-14654	1931
NAS 1-14731	2063
NAS 1-14832	3621
NAS 1-14862	3682
NAS 1-14908	3683
NAS 1-14928	1094
NAS 1-14929	1731
NAS 1-14930	1863
NAS 1-14931	3841
NAS 1-14932	2411
NAS 1-14947	1932
NAS 1-14972	3609
NAS 1-15080	3711
NAS 1-15129	1650
NAS 1-15154	2412
NAS 1-15158	1933
NAS 1-15160	3684
NAS 1-15162	2548
NAS 1-15164	3496
NAS 1-15168	1077
NAS 1-15268	2413
NAS 1-15333	2566
NAS 1-15335	2228
NAS 1-15370	1934
NAS 1-15377	3842
NAS 1-15378	2279
NAS 1-15445	3622
NAS 2-6265	1095
NAS 2-6551	2028
NAS 2-6552	1526
NAS 2-6553	2146
NAS 2-6556	1162
NAS 2-6558	1631
NAS 2-7358	3580
NAS 2-7963	2926
NAS 2-7969	1632
NAS 2-8200	1732
NAS 2-8812	2639
NAS 2-8813	3797
NAS 2-8816	1682
NAS 2-8883	2205
NAS 2-8898	1285
NAS 2-9083	1286
NAS 2-9126	2567
NAS 2-9127	2368
NAS 2-9128	1467
NAS 2-9129	2549
NAS 2-9130	2568
NAS 2-9131	1468
NAS 2-9300	2249
NAS 2-9473	2414
NAS 2-9476	2415
NAS 2-9477	1683
NAS 2-9478	1633
NAS 2-9480	3798
NAS 2-9483	2416
NAS 2-9485	3548
NAS 2-9486	1096
NAS 2-9487	1097
NAS 2-9491	1469
NAS 2-9504	1602
NAS 2-9557	3593
NAS 2-9714	3107
NAS 2-9845	1603
NAS 2-9871	3288
NAS 2-9877	3174
NAS 2-9950	3582
NAS 2-9967	1611
NAS 2-9976	1875
NAS 2-9987	3467
NAS 2-10006	2957
NAS 2-10064	3583
NAS 3-14336	1287
NAS 3-18547	3094
NAS 3-19699	3146
NAS 3-20087	2120
NAS 3-20110	1935
NAS 3-20365	3147
NAS 3-20370	3210
NAS 3-20392	3148
NAS 3-20397	2206
NAS 3-20473	2417
NAS 3-21018	2121
NAS 3-21046	3061
NAS 3-21261	2013
NAS 3-21355	3149
NAS 3-21365	3062
NAS 3-21370	3150
NAS 3-21386	1527
NAS 3-21473	1528
NAS 3-21698	3151
NAS 5-1810	2764
NAS 5-1925	3855
NAS 5-3949	2369
NAS 5-9317	3401
NAS 5-11062	2418
NAS 5-11063	2280
NAS 5-11064	2147
NAS 5-11066	1163
NAS 5-11067	2029
NAS 5-11279	2148
NAS 5-11310	2640
NAS 5-11376	2569
NAS 5-11380	2570
NAS 5-11405	1684
NAS 5-11406	3549
NAS 5-11407	3550
NAS 5-11415	2250

NASA'S UNIVERSITY PROGRAM
APPENDIX A CROSS INDEX BY GRANT/CONTRACT NUMBER

GRANT/ CONTRACT NUMBER	ACC NO.
NAS 5-11431	2149
NAS 5-11438	2641
NAS 5-11450	2419
NAS 5-20028	3022
NAS 5-20062	2281
NAS 5-20064	1470
NAS 5-20079	1386
NAS 5-20080	1387
NAS 5-20093	2150
NAS 5-20094	2151
NAS 5-20622	2571
NAS 5-20672	3342
NAS 5-20674	2030
NAS 5-20705	2891
NAS 5-20721	1164
NAS 5-20796	3429
NAS 5-20818	2698
NAS 5-20833	2765
NAS 5-20871	1288
NAS 5-20939	2572
NAS 5-20943	2170
NAS 5-20974	3799
NAS 5-20995	1388
NAS 5-20999	3685
NAS 5-21960	1289
NAS 5-21965	3800
NAS 5-21980	2420
NAS 5-22307	1389
NAS 5-22325	2171
NAS 5-22346	3686
NAS 5-22349	3801
NAS 5-22360	2766
NAS 5-22375	1529
NAS 5-22379	3758
NAS 5-22392	2837
NAS 5-22408	2851
NAS 5-22409	1685
NAS 5-22410	3802
NAS 5-22475	3031
NAS 5-22537	2282
NAS 5-22575	3108
NAS 5-22576	3497
NAS 5-22577	3712
NAS 5-22587	2573
NAS 5-22816	2096
NAS 5-22833	1686
NAS 5-22835	2283
NAS 5-22875	2574
NAS 5-22892	3289
NAS 5-22903	2734
NAS 5-22908	1876
NAS 5-22915	2421
NAS 5-22929	2422
NAS 5-22939	1165
NAS 5-22946	3216
NAS 5-22959	1651
NAS 5-22963	1902
NAS 5-22964	1454
NAS 5-22965	1166
NAS 5-22966	3430
NAS 5-22981	1733
NAS 5-22987	2089
NAS 5-22989	2767
NAS 5-23006	2575
NAS 5-23199	2370
NAS 5-23230	2576
NAS 5-23236	2892
NAS 5-23237	2284
NAS 5-23274	1687
NAS 5-23285	3803
NAS 5-23315	1167
NAS 5-23316	2251
NAS 5-23338	3402
NAS 5-23387	2768
NAS 5-23457	2285
NAS 5-23462	3804
NAS 5-23481	1530
NAS 5-23494	2371
NAS 5-23500	3805
NAS 5-23522	1290
NAS 5-23557	2638
NAS 5-23558	2274
NAS 5-23571	1966
NAS 5-23576	2769
NAS 5-23664	2215
NAS 5-23677	2423
NAS 5-23684	2642
NAS 5-23688	2834
NAS 5-23702	1471
NAS 5-23703	2643
NAS 5-23705	1531
NAS 5-23706	3806
NAS 5-23710	1936
NAS 5-23732	2252
NAS 5-23738	3191
NAS 5-23761	2753
NAS 5-23771	1688
NAS 5-23777	2172
NAS 5-23785	2893
NAS 5-23799	1819
NAS 5-23800	3239
NAS 5-23801	3336
NAS 5-23808	1689
NAS 5-23809	1785
NAS 5-23859	3241
NAS 5-23891	2733
NAS 5-24080	2852
NAS 5-24086	2942
NAS 5-24096	2424
NAS 5-24100	2770
NAS 5-24101	3036
NAS 5-24105	1390
NAS 5-24130	2286
NAS 5-24134	2372
NAS 5-24135	2577
NAS 5-24139	2425
NAS 5-24144	3063
NAS 5-24148	1937
NAS 5-24152	2853
NAS 5-24165	1391
NAS 5-24166	1392
NAS 5-24189	1393
NAS 5-24206	3328
NAS 5-24218	3687
NAS 5-24230	3807
NAS 5-24232	1291
NAS 5-24236	2253
NAS 5-24241	2811
NAS 5-24242	1820
NAS 5-24250	3343
NAS 5-24251	1821
NAS 5-24264	3242
NAS 5-24275	2064
NAS 5-24293	2152
NAS 5-24294	2153
NAS 5-24295	2578
NAS 5-24296	2579
NAS 5-24297	3551
NAS 5-24298	3552
NAS 5-24299	3553
NAS 5-24305	2287
NAS 5-24308	1098
NAS 5-24328	2754
NAS 5-24329	3243
NAS 5-24331	2580
NAS 5-24336	2154
NAS 5-24339	1168
NAS 5-24354	2755
NAS 5-24358	3329
NAS 5-24383	3431
NAS 5-24385	3808
NAS 5-24407	2288
NAS 5-24409	1292
NAS 5-24420	1293
NAS 5-24422	1822
NAS 5-24430	2031
NAS 5-24431	1786
NAS 5-24436	1227
NAS 5-24437	1857
NAS 5-24441	2426
NAS 5-24445	1394
NAS 5-24452	2854
NAS 5-24454	2581
NAS 5-24455	3594
NAS 5-24457	2855
NAS 5-24462	2097
NAS 5-24463	1532
NAS 5-24466	1533
NAS 5-24479	1294
NAS 5-24480	1938
NAS 5-24486	2771
NAS 5-24487	3809
NAS 5-24493	2427
NAS 5-25002	2582

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APPENDIX A CROSS INDEX BY GRANT/CONTRACT NUMBER

GRANT/ CONTRACT NUMBER	ACC NO.
NAS 5-25007	1395
NAS 5-25013	3290
NAS 5-25018	3498
NAS 5-25030	2098
NAS 5-25031	2583
NAS 5-25032	3403
NAS 5-25038	2584
NAS 5-25039	1472
NAS 5-25043	1295
NAS 5-25049	1169
NAS 5-25054	1534
NAS 5-25062	2065
NAS 5-25063	3788
NAS 5-25070	1396
NAS 5-25076	2943
NAS 5-25081	1652
NAS 5-25084	2772
NAS 5-25091	2428
NAS 5-25097	1734
NAS 5-25101	3344
NAS 5-25120	2273
NAS 5-25125	3759
NAS 5-25132	2289
NAS 5-25136	3283
NAS 5-25144	3432
NAS 5-25145	2585
NAS 5-25148	3810
NAS 5-25151	2644
NAS 5-25153	2586
NAS 5-25158	2587
NAS 5-25165	1851
NAS 5-25181	1983
NAS 5-25185	1823
NAS 5-25310	3554
NAS 5-25327	1070
NAS 5-25351	3032
NAS 6-1667	3404
NAS 6-2388	3713
NAS 6-2439	2838
NAS 6-2454	3499
NAS 6-2455	2856
NAS 6-2456	3152
NAS 6-2463	1473
NAS 6-2484	3109
NAS 6-2498	3584
NAS 6-2506	1535
NAS 6-2519	2857
NAS 6-2602	3244
NAS 6-2617	3043
NAS 6-2627	3585
NAS 6-2686	2812
NAS 6-2695	2099
NAS 6-2706	2254
NAS 6-2707	3617
NAS 6-2726	3245
NAS 6-2794	2588
NAS 6-2795	2813
NAS 6-2816	2100
NAS 6-2818	3246
NAS 6-2820	1766
NAS 6-2826	3247
NAS 6-2855	2351
NAS 6-2884	3433
NAS 6-2885	2814
NAS 6-2888	2255
NAS 8-20247	1877
NAS 8-24908	1043
NAS 8-24953	1044
NAS 8-26146	2958
NAS 8-26379	3434
NAS 8-26749	2677
NAS 8-26758	1604
NAS 8-26930	1018
NAS 8-27972	2429
NAS 8-27974	1536
NAS 8-27975	2430
NAS 8-27976	2718
NAS 8-27977	2645
NAS 8-27978	1170
NAS 8-28058	1011
NAS 8-28097	1045
NAS 8-28660	3321
NAS 8-29100	1063
NAS 8-29271	3345
NAS 8-29313	1171
NAS 8-29316	1046
NAS 8-29566	1099
NAS 8-29584	3346
NAS 8-29603	1397
NAS 8-29937	1064
NAS 8-30253	3586
NAS 8-30537	2431
NAS 8-30563	1047
NAS 8-30619	1976
NAS 8-30653	1939
NAS 8-30654	1019
NAS 8-30656	3370
NAS 8-30657	1940
NAS 8-30752	2432
NAS 8-30753	2858
NAS 8-30880	1012
NAS 8-30883	3371
NAS 8-31145	1537
NAS 8-31150	2699
NAS 8-31170	1048
NAS 8-31171	1049
NAS 8-31172	1916
NAS 8-31192	1100
NAS 8-31193	1941
NAS 8-31196	1101
NAS 8-31223	1020
NAS 8-31233	2216
NAS 8-31293	1050
NAS 8-31294	3153
NAS 8-31321	1051
NAS 8-31333	3183
NAS 8-31345	1052
NAS 8-31346	1398
NAS 8-31347	1653
NAS 8-31350	2433
NAS 8-31373	2678
NAS 8-31374	2373
NAS 8-31377	3184
NAS 8-31441	2746
NAS 8-31459	3500
NAS 8-31470	2741
NAS 8-31549	2374
NAS 8-31550	1156
NAS 8-31552	2434
NAS 8-31564	3340
NAS 8-31571	1296
NAS 8-31572	1021
NAS 8-31673	1654
NAS 8-31688	1655
NAS 8-31718	3347
NAS 8-31729	1053
NAS 8-31731	1013
NAS 8-31767	2700
NAS 8-31770	2679
NAS 8-31773	3435
NAS 8-31775	3555
NAS 8-31776	2742
NAS 8-31802	3064
NAS 8-31849	2701
NAS 8-31850	1942
NAS 8-31895	1054
NAS 8-31897	2735
NAS 8-31907	3065
NAS 8-31948	1102
NAS 8-31951	3688
NAS 8-31953	2990
NAS 8-31958	1690
NAS 8-31980	3348
NAS 8-31987	2589
NAS 8-31990	1943
NAS 8-32031	3349
NAS 8-32046	3248
NAS 8-32067	3843
NAS 8-32111	3154
NAS 8-32118	3350
NAS 8-32127	1103
NAS 8-32148	2290
NAS 8-32162	3205
NAS 8-32212	2859
NAS 8-32215	1022
NAS 8-32218	2692
NAS 8-32221	1014
NAS 8-32225	1055
NAS 8-32230	1078
NAS 8-32263	1297
NAS 8-32313	2747
NAS 8-32332	2590
NAS 8-32353	3206
NAS 8-32354	2719

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APPENDIX A CROSS INDEX BY GRANT/CONTRACT NUMBER

GRANT/ CONTRACT NUMBER	ACC NO.
NAS 8-32355	1298
NAS 8-32357	1079
NAS 8-32364	1691
NAS 8-32386	1065
NAS 8-32397	1944
NAS 8-32398	1056
NAS 8-32406	3225
NAS 8-32425	2959
NAS 8-32437	3372
NAS 8-32481	1066
NAS 8-32483	1015
NAS 8-32484	3351
NAS 8-32485	2977
NAS 8-32486	3844
NAS 8-32527	3436
NAS 8-32569	2591
NAS 8-32571	1474
NAS 8-32577	1399
NAS 8-32584	3578
NAS 8-32605	1299
NAS 8-32608	1057
NAS 8-32609	3207
NAS 8-32611	3352
NAS 8-32614	2773
NAS 8-32633	1023
NAS 8-32634	1024
NAS 8-32635	3353
NAS 8-32636	3595
NAS 8-32639	2960
NAS 8-32657	3226
NAS 8-32661	2592
NAS 8-32689	3556
NAS 8-32690	2961
NAS 8-32691	2375
NAS 8-32692	3354
NAS 8-32694	3192
NAS 8-32695	3373
NAS 8-32807	2155
NAS 8-32810	2680
NAS 8-32817	3208
NAS 8-32818	1058
NAS 8-32828	2032
NAS 8-32831	3557
NAS 8-32834	1016
NAS 8-32835	1868
NAS 8-32838	2697
NAS 8-32844	2361
NAS 8-32852	1300
NAS 8-32893	2978
NAS 8-32894	3374
NAS 8-32897	1945
NAS 8-32898	1903
NAS 8-32901	3794
NAS 8-32903	2256
NAS 8-32904	2994
NAS 8-32905	3501
NAS 8-32906	3502
NAS 8-32912	2681
NAS 8-32920	1017
NAS 8-32923	1040
NAS 8-32925	2435
NAS 8-32936	2962
NAS 8-32937	1080
NAS 8-32944	2847
NAS 8-32945	1000
NAS 8-32947	2979
NAS 8-32950	1104
NAS 8-32951	3227
NAS 8-32975	2743
NAS 8-32976	2707
NAS 8-32977	2744
NAS 8-32993	2059
NAS 8-32994	2436
NAS 8-33010	2014
NAS 8-33011	1400
NAS 8-33012	1301
NAS 8-33013	2128
NAS 8-33014	1041
NAS 8-33015	3066
NAS 8-33023	3405
NAS 8-33065	3355
NAS 8-33071	1869
NAS 8-33074	2963
NAS 8-33084	1692
NAS 8-33085	2860
NAS 8-33087	2090
NAS 8-33088	3284
NAS 8-33092	1025
NAS 8-33093	1946
NAS 8-33096	1059
NAS 8-33099	2927
NAS 8-33102	2774
NAS 8-33115	1475
NAS 8-33132	1060
NAS 8-33148	3760
NAS 8-33150	3845
NAS 8-33225	3356
NAS 9-9317	2225
NAS 9-11162	3463
NAS 9-11676	3468
NAS 9-11827	3406
NAS 9-12334	2437
NAS 9-12434	3437
NAS 9-12485	2438
NAS 9-12560	2646
NAS 9-13029	3761
NAS 9-13669	3316
NAS 9-13680	3503
NAS 9-13737	3380
NAS 9-13743	3762
NAS 9-13844	1033
NAS 9-13894	3438
NAS 9-13904	3439
NAS 9-13940	2839
NAS 9-14052	2173
NAS 9-14209	3469
NAS 9-14251	1157
NAS 9-14322	3381
NAS 9-14407	3382
NAS 9-14491	3504
NAS 9-14533	2166
NAS 9-14538	3103
NAS 9-14546	3383
NAS 9-14565	1401
NAS 9-14581	3505
NAS 9-14632	2217
NAS 9-14641	3572
NAS 9-14662	3384
NAS 9-14689	3440
NAS 9-14692	1105
NAS 9-14697	3059
NAS 9-14715	3385
NAS 9-14770	1001
NAS 9-14810	3506
NAS 9-14828	3441
NAS 9-14848	2708
NAS 9-14857	3470
NAS 9-14860	3193
NAS 9-14871	3596
NAS 9-14875	3442
NAS 9-14899	2167
NAS 9-14931	2861
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NGR 33-010-081	2899
NGR 33-010-101	2900
NGR 33-010-108	2901
NGR 33-010-146	2902
NGR 33-010-161	2903
NGR 33-010-172	2904
NGR 33-010-182	2905
NGR 33-010-188	2906
NGR 33-010-189	2907
NGR 33-010-220	2908
NGR 33-013-086	2841
NGR 33-015-108	2991
NGR 33-015-139	2998
NGR 33-015-141	2999
NGR 33-015-165	3000
NGR 33-015-169	3001
NGR 33-015-180	3002
NGR 33-016-131	2929
NGR 33-016-167	2930
NGR 33-016-196	2931
NGR 33-016-201	2932
NGR 33-018-148	2969
NGR 33-032-004	3021
NGR 33-209-002	2925
NGR 33-219-002	3018
NGR 34-002-188	3045
NGR 34-002-195	3046
NGR 36-008-161	3114
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NGR 36-033-003	3093
NGR 38-003-020	3202
NGR 38-003-036	3203
NGR 39-007-011	3231
NGR 39-007-043	3232
NGR 39-007-056	3233
NGR 39-007-061	3234
NGR 39-007-064	3235
NGR 39-009-034	3256
NGR 39-009-077	3257
NGR 39-009-180	3258
NGR 39-009-270	3259
NGR 39-010-149	3286
NGR 39-011-137	3295
NGR 39-011-161	3296
NGR 39-087-021	3211
NGR 39-087-053	3212
NGR 40-002-088	3308
NGR 40-002-116	3309
NGR 40-002-123	3310
NGR 43-001-134	3360
NGR 43-003-015	3341
NGR 43-021-002	3332
NGR 44-001-117	3449
NGR 44-004-030	3560
NGR 44-004-120	3561
NGR 44-004-124	3562
NGR 44-005-002	3477
NGR 44-005-091	3478
NGR 44-005-133	3479
NGR 44-005-137	3480
NGR 44-006-137	3414
NGR 44-012-152	3515
NGR 44-012-165	3516
NGR 44-012-209	3517
NGR 44-012-225	3518
NGR 44-012-258	3519
NGR 44-012-282	3520
NGR 44-012-283	3521
NGR 44-081-001	3391
NGR 44-081-005	3392
NGR 44-095-001	3390
NGR 45-003-108	3588
NGR 47-002-041	3705
NGR 47-003-052	3632
NGR 47-004-090	3718
NGR 47-004-129	3719
NGR 47-005-172	3690
NGR 47-020-006	3623
NGR 48-002-033	3769
NGR 48-002-141	3770
NGR 48-002-142	3771
NGR 50-002-051	3816
NGR 50-002-162	3817
NGR 50-002-189	3818
NGR 50-002-191	3819
NGR 50-002-215	3820
NGR 50-007-001	3837
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NGT 01-002-080	1067
NGT 01-002-095	1068
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NGT 01-005-750	1034
NGT 01-005-780	1035
NGT 01-008-021	1061
NGT 05-020-409	1341
NGT 05-020-412	1342
NGT 05-020-777	1343
NGT 09-011-058	1828
NGT 09-011-060	1829
NGT 11-008-004	1968
NGT 11-013-001	1979
NGT 14-007-780	2017
NGT 21-002-254	2316
NGT 21-025-006	2275
NGT 21-027-012	2246
NGT 24-005-078	2653
NGT 32-004-770	2833
NGT 32-010-001	2803
NGT 34-017-001	3030
NGT 36-001-780	3134
NGT 36-004-780	3136
NGT 36-008-007	3116
NGT 36-008-780	3117
NGT 36-025-780	3095
NGT 36-027-011	3071
NGT 37-003-760	3185
NGT 39-108-750	3240
NGT 43-014-750	3338
NGT 44-005-114	3481
NGT 44-005-115	3482
NGT 44-033-750	3399
NGT 44-073-750	3427
NGT 47-003-028	3633
NGT 47-003-029	3634
NSG 801	2204
NSG 802	3180
NSG 803	1977
NSG 806	1749
NSG 901	1853
NSG 1005	1192
NSG 1008	3312
NSG 1010	3691
NSG 1015	3720
NSG 1020	3721
NSG 1026	1796
NSG 1028	3635
NSG 1046	2181
NSG 1048	2476
NSG 1050	2710
NSG 1058	3047
NSG 1064	3722
NSG 1070	2781
NSG 1077	3048
NSG 1079	3636
NSG 1083	2685
NSG 1085	3723
NSG 1087	3637
NSG 1095	3611
NSG 1098	3638
NSG 1110	1797
NSG 1116	3049
NSG 1124	3724
NSG 1128	3692
NSG 1131	3639
NSG 1139	2182
NSG 1143	3640
NSG 1150	2061
NSG 1152	3641
NSG 1155	1798
NSG 1159	1917
NSG 1161	1799
NSG 1164	2867
NSG 1165	2201
NSG 1167	3642
NSG 1169	2842
NSG 1171	3361
NSG 1174	3450
NSG 1177	3643
NSG 1180	3693
NSG 1185	3137
NSG 1190	2477
NSG 1196	3821
NSG 1198	2947
NSG 1203	3612
NSG 1205	3050
NSG 1209	3629
NSG 1216	1800
NSG 1219	2478
NSG 1221	1642
NSG 1224	3362
NSG 1226	3644
NSG 1235	3376
NSG 1239	3725
NSG 1243	2606
NSG 1244	2948
NSG 1248	2949
NSG 1249	2686
NSG 1250	3726
NSG 1251	1801
NSG 1252	3645
NSG 1253	2782
NSG 1254	3727
NSG 1255	3728
NSG 1262	3729
NSG 1266	2009
NSG 1269	2183
NSG 1271	3646
NSG 1275	3730
NSG 1276	3731

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NSG 1283	1912
NSG 1286	3732
NSG 1288	1951
NSG 1289	1802
NSG 1294	3624
NSG 1295	2547
NSG 1296	3037
NSG 1297	3317
NSG 1301	2185
NSG 1304	1767
NSG 1306	2607
NSG 1308	3260
NSG 1312	2479
NSG 1313	3589
NSG 1314	2801
NSG 1315	3648
NSG 1316	3569
NSG 1320	1830
NSG 1321	3649
NSG 1323	2480
NSG 1324	3650
NSG 1326	2608
NSG 1328	3261
NSG 1329	1866
NSG 1330	2635
NSG 1331	3651
NSG 1334	3323
NSG 1335	3694
NSG 1336	2317
NSG 1337	2481
NSG 1338	1803
NSG 1341	3652
NSG 1342	3755
NSG 1345	1344
NSG 1346	3038
NSG 1349	2482
NSG 1351	1952
NSG 1352	1953
NSG 1353	3051
NSG 1354	3733
NSG 1355	3052
NSG 1356	2483
NSG 1357	3653
NSG 1358	3734
NSG 1360	2970
NSG 1361	2241
NSG 1362	3654
NSG 1364	3735
NSG 1365	2909
NSG 1369	2711
NSG 1370	3655
NSG 1372	2136
NSG 1373	2609
NSG 1374	3451
NSG 1375	2687
NSG 1376	3736
NSG 1377	3053
NSG 1378	2836
NSG 1379	3656
NSG 1381	1345
NSG 1382	3737
NSG 1383	3104
NSG 1385	3613
NSG 1386	1559
NSG 1387	3262
NSG 1388	3695
NSG 1389	3738
NSG 1390	3039
NSG 1391	3363
NSG 1392	2722
NSG 1393	3657
NSG 1394	3658
NSG 1395	3659
NSG 1396	3105
NSG 1397	2186
NSG 1398	1768
NSG 1399	3696
NSG 1400	2072
NSG 1401	1643
NSG 1402	2688
NSG 1403	3697
NSG 1404	3186
NSG 1405	1743
NSG 1407	3452
NSG 1408	3377
NSG 1409	1769
NSG 1411	3318
NSG 1412	3792
NSG 1413	2484
NSG 1414	1831
NSG 1415	1804
NSG 1417	3172
NSG 1418	1818
NSG 1419	2122
NSG 1420	1918
NSG 1424	2209
NSG 1425	1891
NSG 1427	3698
NSG 1428	3739
NSG 1429	3607
NSG 1430	1236
NSG 1431	2654
NSG 1432	1744
NSG 1433	1770
NSG 1434	2073
NSG 1435	3614
NSG 1436	1913
NSG 1437	3054
NSG 1438	1805
NSG 1439	1745
NSG 1440	3522
NSG 1441	3660
NSG 1442	2259
NSG 1443	1346
NSG 1444	2933
NSG 1445	3096
NSG 1446	3523
NSG 1447	2485
NSG 1448	2610
NSG 1449	1806
NSG 1450	2868
NSG 1451	2010
NSG 1452	2712
NSG 1453	2486
NSG 1454	2689
NSG 1455	3369
NSG 1456	3625
NSG 1458	3699
NSG 1459	3661
NSG 1460	2239
NSG 1461	3313
NSG 1462	3020
NSG 1463	3055
NSG 1464	3662
NSG 1465	3663
NSG 1466	3664
NSG 1467	3176
NSG 1468	2318
NSG 1469	2934
NSG 1470	3740
NSG 1471	2074
NSG 1472	1807
NSG 1473	3665
NSG 1474	1808
NSG 1475	3483
NSG 1476	1702
NSG 1477	3666
NSG 1478	3626
NSG 1479	3524
NSG 1480	3667
NSG 1481	3187
NSG 1482	2611
NSG 1483	1193
NSG 1484	3615
NSG 1485	2843
NSG 1486	3138
NSG 1487	1919
NSG 1488	1771
NSG 1489	1703
NSG 1490	1493
NSG 1491	3668
NSG 1492	3669
NSG 1493	1954
NSG 1494	2612
NSG 1495	3314
NSG 1496	3217
NSG 1497	1892
NSG 1498	3118
NSG 1499	2158
NSG 1500	3670
NSG 1501	2210

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NSG 1504	2488
NSG 1505	3627
NSG 1506	2739
NSG 1507	3672
NSG 1508	1809
NSG 1509	3700
NSG 1510	2971
NSG 1511	2690
NSG 1512	3741
NSG 1513	1772
NSG 1514	3608
NSG 1515	2696
NSG 1516	3040
NSG 1517	3673
NSG 1518	3846
NSG 1519	3674
NSG 1520	3742
NSG 1521	3675
NSG 1522	3676
NSG 1523	3324
NSG 1524	3743
NSG 1525	3744
NSG 1526	3745
NSG 1527	3746
NSG 1528	1644
NSG 1529	3364
NSG 1530	2137
NSG 1531	3747
NSG 1532	3056
NSG 1533	2187
NSG 1534	3590
NSG 1535	2138
NSG 1536	1645
NSG 1537	2188
NSG 1538	2139
NSG 1539	2691
NSG 1540	2705
NSG 1541	2869
NSG 1542	1893
NSG 1543	2189
NSG 1544	3525
NSG 1545	3218
NSG 1546	3748
NSG 1547	2075
NSG 1548	3425
NSG 1549	3057
NSG 1550	2870
NSG 1551	2489
NSG 1552	3628
NSG 1553	2490
NSG 1554	2190
NSG 1555	1810
NSG 1556	1811
NSG 1557	1746
NSG 1558	2319
NSG 1559	2950
NSG 1560	3677
NSG 1561	3678
NSG 1562	3058
NSG 2006	3426
NSG 2007	1347
NSG 2008	2636
NSG 2010	2491
NSG 2013	3101
NSG 2014	2655
NSG 2018	2613
NSG 2020	1348
NSG 2026	1430
NSG 2029	1854
NSG 2031	2387
NSG 2032	2492
NSG 2034	3173
NSG 2038	3749
NSG 2039	1607
NSG 2040	2140
NSG 2041	2230
NSG 2047	1257
NSG 2048	1750
NSG 2057	2050
NSG 2058	1062
NSG 2062	2783
NSG 2063	1608
NSG 2065	3526
NSG 2066	1258
NSG 2077	3494
NSG 2078	2910
NSG 2085	1349
NSG 2086	1626
NSG 2088	2835
NSG 2090	1259
NSG 2091	2141
NSG 2092	1350
NSG 2098	2278
NSG 2099	2076
NSG 2100	1351
NSG 2104	3822
NSG 2112	1125
NSG 2113	2614
NSG 2114	2784
NSG 2116	3297
NSG 2117	3298
NSG 2118	2493
NSG 2119	2077
NSG 2120	1894
NSG 2121	1352
NSG 2122	3263
NSG 2127	1431
NSG 2128	1704
NSG 2130	1260
NSG 2132	1353
NSG 2134	2202
NSG 2137	3464
NSG 2139	2237
NSG 2140	2745
NSG 2142	2494
NSG 2143	1924
NSG 2144	2388
NSG 2147	2951
NSG 2149	2018
NSG 2151	1432
NSG 2156	2546
NSG 2162	3119
NSG 2166	1354
NSG 2170	2723
NSG 2172	2495
NSG 2174	2911
NSG 2175	3120
NSG 2176	3772
NSG 2179	3121
NSG 2180	2496
NSG 2182	2952
NSG 2183	1855
NSG 2185	1761
NSG 2186	1261
NSG 2188	2007
NSG 2190	1355
NSG 2192	2110
NSG 2193	2706
NSG 2194	2785
NSG 2196	2497
NSG 2198	3023
NSG 2199	1223
NSG 2203	1356
NSG 2205	1126
NSG 2207	1433
NSG 2209	1262
NSG 2210	1246
NSG 2213	1263
NSG 2214	1357
NSG 2215	1358
NSG 2217	1032
NSG 2219	1264
NSG 2220	3122
NSG 2222	1595
NSG 2224	1265
NSG 2225	3701
NSG 2226	3453
NSG 2228	3773
NSG 2229	1194
NSG 2230	2498
NSG 2232	1665
NSG 2233	1359
NSG 2234	1460
NSG 2235	1266
NSG 2236	1267
NSG 2238	2026
NSG 2239	1268
NSG 2241	3264
NSG 2243	1434
NSG 2244	1234
NSG 2245	2615
NSG 2246	1360

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NSG 2249	1361
NSG 2251	1362
NSG 2253	1666
NSG 2254	1363
NSG 2255	1364
NSG 2256	1461
NSG 2257	2142
NSG 2258	1365
NSG 2259	2924
NSG 2260	3774
NSG 2261	2051
NSG 2262	2912
NSG 2263	2499
NSG 2264	3003
NSG 2265	2389
NSG 2266	2500
NSG 2269	1270
NSG 2270	1494
NSG 2271	1435
NSG 2273	1271
NSG 2274	1272
NSG 2275	1627
NSG 2276	1609
NSG 2280	1436
NSG 2281	1247
NSG 2282	3181
NSG 2283	1195
NSG 2284	1085
NSG 2285	1366
NSG 2286	1628
NSG 2287	1667
NSG 2288	1895
NSG 2289	1367
NSG 2290	1495
NSG 2291	2748
NSG 2292	1368
NSG 2293	1273
NSG 2294	1369
NSG 2296	3123
NSG 2297	1370
NSG 2298	3124
NSG 2299	2786
NSG 2300	2159
NSG 2301	3750
NSG 2302	1274
NSG 2303	2260
NSG 2304	1610
NSG 2305	1275
NSG 2306	1955
NSG 2307	1276
NSG 2308	1371
NSG 2309	1127
NSG 2310	3527
NSG 2311	1856
NSG 2312	3182
NSG 2314	1277
NSG 2315	1278
NSG 2316	2656
NSG 2317	1372
NSG 2318	2211
NSG 2320	1496
NSG 2321	1497
NSG 2322	1373
NSG 2323	1956
NSG 2324	2261
NSG 2325	2219
NSG 2326	1374
NSG 2327	2160
NSG 2328	2019
NSG 2330	1036
NSG 2331	2913
NSG 2332	1279
NSG 2333	2616
NSG 2334	2501
NSG 2335	2502
NSG 2337	3484
NSG 2338	3528
NSG 2339	1280
NSG 3002	3299
NSG 3004	2674
NSG 3009	3072
NSG 3011	1668
NSG 3012	3265
NSG 3013	2212
NSG 3015	1957
NSG 3016	3266
NSG 3017	2503
NSG 3018	1896
NSG 3019	2914
NSG 3022	3139
NSG 3024	3140
NSG 3028	1437
NSG 3030	2008
NSG 3031	3267
NSG 3032	3268
NSG 3033	2143
NSG 3034	1560
NSG 3036	1958
NSG 3037	2123
NSG 3038	1669
NSG 3039	2020
NSG 3040	3073
NSG 3041	2657
NSG 3042	2021
NSG 3043	2078
NSG 3044	2504
NSG 3045	3141
NSG 3046	2505
NSG 3047	1561
NSG 3048	2124
NSG 3050	2871
NSG 3051	3004
NSG 3052	1959
NSG 3054	3189
NSG 3055	1562
NSG 3058	3074
NSG 3059	2935
NSG 3060	1670
NSG 3061	2506
NSG 3062	3075
NSG 3064	2507
NSG 3065	1228
NSG 3066	3142
NSG 3067	3170
NSG 3069	2820
NSG 3071	2111
NSG 3073	3751
NSG 3074	3076
NSG 3075	1086
NSG 3076	2508
NSG 3078	3077
NSG 3079	2509
NSG 3082	1498
NSG 3084	3156
NSG 3085	3078
NSG 3086	1671
NSG 3087	2191
NSG 3088	2510
NSG 3089	3529
NSG 3090	3219
NSG 3091	3143
NSG 3092	2822
NSG 3094	2658
NSG 3095	2981
NSG 3096	1920
NSG 3097	3269
NSG 3098	2079
NSG 3099	3157
NSG 3102	2511
NSG 3103	1563
NSG 3105	2112
NSG 3106	1960
NSG 3107	1762
NSG 3108	2953
NSG 3109	1029
NSG 3112	3428
NSG 3113	2713
NSG 3114	2213
NSG 3115	3079
NSG 3116	1499
NSG 3117	2161
NSG 3118	3311
NSG 3119	2113
NSG 3120	1897
NSG 3121	3158
NSG 3122	1648
NSG 3123	3028
NSG 3124	1375
NSG 3125	2214
NSG 3126	3080
NSG 3127	1672
NSG 3128	3220

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NSG 3131	3081
NSG 3132	1993
NSG 3133	2125
NSG 3134	3793
NSG 3135	2114
NSG 3136	3209
NSG 3137	2558
NSG 3138	2982
NSG 3139	3159
NSG 3140	3082
NSG 3141	2011
NSG 3142	3083
NSG 3143	2022
NSG 3144	3097
NSG 3145	1673
NSG 3146	3570
NSG 3147	3144
NSG 3148	2617
NSG 3149	2023
NSG 3150	1564
NSG 3151	3084
NSG 3152	3775
NSG 3153	1500
NSG 3154	1037
NSG 3155	3098
NSG 3156	3160
NSG 3157	3034
NSG 3159	3102
NSG 3160	3035
NSG 3161	2618
NSG 3162	3236
NSG 3163	3300
NSG 3164	3125
NSG 3165	2619
NSG 3166	3270
NSG 3167	1674
NSG 3168	3301
NSG 3169	1763
NSG 3170	2972
NSG 3171	3161
NSG 3172	3213
NSG 3173	3365
NSG 3174	2844
NSG 3175	2513
NSG 3176	2787
NSG 3177	3702
NSG 3178	2788
NSG 3179	3237
NSG 3180	2802
NSG 3181	1706
NSG 3182	2126
NSG 3183	2095
NSG 3184	1773
NSG 3185	2115
NSG 3186	2203
NSG 3187	2514
NSG 3188	3145
NSG 3189	1774
NSG 3190	3530
NSG 3191	2848
NSG 3192	2620
NSG 3193	3238
NSG 3194	3776
NSG 3195	2127
NSG 3196	1675
NSG 3197	3085
NSG 3198	3531
NSG 3199	2714
NSG 3200	2220
NSG 3201	3454
NSG 3202	3214
NSG 3203	3086
NSG 3204	3752
NSG 3206	3087
NSG 3207	3088
NSG 3208	2515
NSG 3209	2238
NSG 3210	2516
NSG 3211	3089
NSG 3212	3271
NSG 3213	2116
NSG 3214	3302
NSG 3215	2564
NSG 3217	3847
NSG 3219	1565
NSG 3220	2012
NSG 3221	3090
NSG 3222	3099
NSG 3223	3100
NSG 3224	3366
NSG 3225	3319
NSG 3227	1438
NSG 3228	1961
NSG 4001	1501
NSG 4002	1376
NSG 4003	2117
NSG 4006	2192
NSG 4007	2193
NSG 4008	2194
NSG 4009	2195
NSG 4011	1229
NSG 4012	2196
NSG 4013	3198
NSG 4014	1215
NSG 4015	1502
NSG 4016	1872
NSG 4017	2197
NSG 5005	3532
NSG 5009	2247
NSG 5011	1676
NSG 5012	1962
NSG 5013	2845
NSG 5014	2750
NSG 5017	2320
NSG 5022	1128
NSG 5023	1129
NSG 5032	2936
NSG 5034	2937
NSG 5035	2321
NSG 5039	3777
NSG 5042	2322
NSG 5045	2938
NSG 5048	2323
NSG 5049	2080
NSG 5051	2248
NSG 5053	3679
NSG 5054	3024
NSG 5056	1503
NSG 5060	2915
NSG 5063	2789
NSG 5066	1780
NSG 5070	1504
NSG 5071	1832
NSG 5072	2872
NSG 5073	1677
NSG 5074	2276
NSG 5075	1755
NSG 5076	2517
NSG 5077	3019
NSG 5079	2873
NSG 5080	2874
NSG 5081	1833
NSG 5082	1963
NSG 5083	2324
NSG 5084	2325
NSG 5085	3563
NSG 5087	3564
NSG 5088	2659
NSG 5090	2262
NSG 5092	1462
NSG 5093	1439
NSG 5094	2326
NSG 5096	1994
NSG 5098	1707
NSG 5100	3823
NSG 5101	2169
NSG 5102	3005
NSG 5103	1708
NSG 5104	1834
NSG 5106	1596
NSG 5108	1646
NSG 5109	1813
NSG 5110	1873
NSG 5111	1781
NSG 5112	2327
NSG 5113	2518
NSG 5116	1898
NSG 5118	2875
NSG 5120	3042
NSG 5121	2328
NSG 5122	1845
NSG 5123	2329

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APPENDIX A CROSS INDEX BY GRANT/CONTRACT NUMBER

GRANT/ CONTRACT NUMBER	ACC NO.
NSG 5124	1709
NSG 5125	3006
NSG 5126	3824
NSG 5127	1835
NSG 5128	2390
NSG 5129	2330
NSG 5130	2939
NSG 5131	1377
NSG 5132	1378
NSG 5133	2940
NSG 5134	3455
NSG 5136	3091
NSG 5137	2331
NSG 5139	2621
NSG 5140	3126
NSG 5141	3127
NSG 5143	2391
NSG 5144	1775
NSG 5145	2751
NSG 5146	2876
NSG 5147	1710
NSG 5149	1505
NSG 5150	2519
NSG 5151	2716
NSG 5152	3825
NSG 5153	1711
NSG 5154	3533
NSG 5155	1597
NSG 5156	3456
NSG 5157	2520
NSG 5158	1836
NSG 5159	1995
NSG 5160	2392
NSG 5161	2263
NSG 5162	3221
NSG 5163	2877
NSG 5164	1440
NSG 5165	1506
NSG 5166	2521
NSG 5167	3534
NSG 5168	2878
NSG 5169	1507
NSG 5170	1598
NSG 5171	2622
NSG 5172	2332
NSG 5173	1782
NSG 5174	2333
NSG 5176	2393
NSG 5177	2334
NSG 5178	1712
NSG 5179	1756
NSG 5180	3826
NSG 5181	3827
NSG 5183	3162
NSG 5184	2264
NSG 5185	3272
NSG 5186	1837
NSG 5187	2724
NSG 5188	3393
NSG 5189	2623
NSG 5190	1508
NSG 5191	2394
NSG 5192	1846
NSG 5193	3457
NSG 5194	2879
NSG 5195	2798
NSG 5196	2024
NSG 5197	1196
NSG 5198	3604
NSG 5199	2144
NSG 5200	2880
NSG 5201	1441
NSG 5202	2052
NSG 5203	1996
NSG 5204	2522
NSG 5205	3273
NSG 5206	2624
NSG 5207	3163
NSG 5208	1197
NSG 5209	2335
NSG 5210	2265
NSG 5211	1713
NSG 5212	3274
NSG 5213	2081
NSG 5214	3579
NSG 5215	3597
NSG 5216	3598
NSG 5218	2557
NSG 5219	1072
NSG 5220	1964
NSG 5221	3753
NSG 5222	2881
NSG 5223	3828
NSG 5224	1198
NSG 5225	2266
NSG 5226	2395
NSG 5227	1442
NSG 5228	2396
NSG 5229	2397
NSG 5230	2267
NSG 5231	1997
NSG 5232	2625
NSG 5233	3535
NSG 5234	2336
NSG 5235	1130
NSG 5236	3536
NSG 5237	2660
NSG 5238	2222
NSG 5239	2398
NSG 5240	3778
NSG 5241	3829
NSG 5242	3830
NSG 5243	1199
NSG 5244	1200
NSG 5245	2740
NSG 5246	1714
NSG 5247	3128
NSG 5248	2790
NSG 5249	1131
NSG 5250	3007
NSG 5251	3831
NSG 5252	3832
NSG 5253	2523
NSG 5254	1379
NSG 5255	2268
NSG 5256	1443
NSG 5257	3188
NSG 5258	1678
NSG 5259	1679
NSG 5260	2524
NSG 5262	1599
NSG 5263	1509
NSG 5265	3129
NSG 5266	3458
NSG 5267	1201
NSG 5268	1838
NSG 5269	2269
NSG 5270	3303
NSG 5271	3008
NSG 5272	1510
NSG 5273	2882
NSG 5274	2983
NSG 5275	3130
NSG 5276	3275
NSG 5277	2791
NSG 5278	2082
NSG 5279	1132
NSG 5280	3565
NSG 5281	2626
NSG 5282	2627
NSG 5283	3779
NSG 5284	2954
NSG 5285	2637
NSG 5286	3415
NSG 5287	2337
NSG 5288	1814
NSG 5289	3680
NSG 5290	1849
NSG 5291	2053
NSG 5292	1444
NSG 5293	2399
NSG 5294	2083
NSG 5295	1839
NSG 5296	3287
NSG 5297	3333
NSG 5298	2338
NSG 5299	3131
NSG 5300	1715
NSG 5301	1202
NSG 5302	1133
NSG 5303	1716
NSG 6004	3276
NSG 6005	2661
NSG 6006	2353

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GRANT/ CONTRACT NUMBER	ACC NO.
NSG 6007	3222
NSG 6008	3485
NSG 6009	2662
NSG 6010	2339
NSG 6011	3304
NSG 6012	3566
NSG 6013	2759
NSG 6014	1073
NSG 6015	1776
NSG 6016	2354
NSG 6017	2355
NSG 6018	3177
NSG 6019	3223
NSG 6020	2916
NSG 6021	2663
NSG 6022	2760
NSG 6023	3567
NSG 7002	1511
NSG 7003	3009
NSG 7005	2664
NSG 7010	2525
NSG 7011	1134
NSG 7015	3416
NSG 7016	2725
NSG 7019	1087
NSG 7020	1135
NSG 7022	3060
NSG 7024	1136
NSG 7026	1237
NSG 7027	1566
NSG 7029	1380
NSG 7032	3417
NSG 7034	3568
NSG 7035	3092
NSG 7037	3459
NSG 7038	3599
NSG 7040	1088
NSG 7041	3164
NSG 7043	3418
NSG 7044	2084
NSG 7045	1137
NSG 7046	2340
NSG 7048	2526
NSG 7049	3367
NSG 7050	3833
NSG 7052	1512
NSG 7055	2270
NSG 7065	2973
NSG 7069	1965
NSG 7070	1138
NSG 7071	2992
NSG 7072	3857
NSG 7075	2883
NSG 7076	3325
NSG 7077	2527
NSG 7080	2792
NSG 7081	2528
NSG 7083	3858
NSG 7085	3780
NSG 7087	2726
NSG 7092	1381
NSG 7093	2984
NSG 7094	1203
NSG 7095	2400
NSG 7096	3326
NSG 7100	1567
NSG 7101	1139
NSG 7102	1568
NSG 7105	2884
NSG 7106	1159
NSG 7108	2665
NSG 7110	1382
NSG 7114	1140
NSG 7117	1383
NSG 7118	2529
NSG 7120	3277
NSG 7121	1569
NSG 7125	1204
NSG 7126	2917
NSG 7127	1445
NSG 7128	1717
NSG 7129	1205
NSG 7130	1718
NSG 7133	3834
NSG 7138	3165
NSG 7141	1629
NSG 7142	1141
NSG 7143	1899
NSG 7144	2846
NSG 7145	1815
NSG 7146	1142
NSG 7147	3305
NSG 7150	3010
NSG 7151	1587
NSG 7152	1446
NSG 7154	2559
NSG 7156	2918
NSG 7157	3419
NSG 7158	1513
NSG 7159	3537
NSG 7161	1570
NSG 7162	3538
NSG 7164	1514
NSG 7165	1719
NSG 7166	1720
NSG 7167	2118
NSG 7168	1143
NSG 7169	2941
NSG 7170	2849
NSG 7172	3856
NSG 7173	3781
NSG 7174	3782
NSG 7176	2401
NSG 7178	3199
NSG 7179	1998
NSG 7180	1515
NSG 7184	2974
NSG 7186	2530
NSG 7187	2628
NSG 7189	3460
NSG 7190	2358
NSG 7192	3863
NSG 7193	3278
NSG 7194	2885
NSG 7196	2341
NSG 7200	2886
NSG 7201	1144
NSG 7202	1206
NSG 7204	1384
NSG 7205	1447
NSG 7206	3600
NSG 7207	3848
NSG 7208	1464
NSG 7209	2629
NSG 7210	3601
NSG 7212	2054
NSG 7214	3790
NSG 7215	3835
NSG 7219	3851
NSG 7220	1448
NSG 7221	2666
NSG 7222	2985
NSG 7223	3854
NSG 7225	3011
NSG 7226	3591
NSG 7227	2531
NSG 7228	3486
NSG 7229	1224
NSG 7231	1721
NSG 7232	3539
NSG 7235	2919
NSG 7236	1900
NSG 7237	2667
NSG 7238	1145
NSG 7239	1516
NSG 7241	2986
NSG 7242	1921
NSG 7245	1914
NSG 7246	1146
NSG 7247	2062
NSG 7248	2887
NSG 7249	1147
NSG 7250	3540
NSG 7252	2342
NSG 7253	2343
NSG 7254	2365
NSG 7255	1089
NSG 7256	2793
NSG 7257	2162
NSG 7259	2668
NSG 7260	2344
NSG 7261	1225
NSG 7262	1449
NSG 7263	1226

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GRANT/ CONTRACT NUMBER	ACC NO.
NSG 7264	3862
NSG 7265	1148
NSG 7266	3703
NSG 7267	1925
NSG 7268	2920
NSG 7269	1969
NSG 7270	3012
NSG 7271	1747
NSG 7272	3850
NSG 7273	2532
NSG 7274	1777
NSG 7275	1207
NSG 7276	1517
NSG 7277	1450
NSG 7278	2119
NSG 7279	2630
NSG 7280	2794
NSG 7281	1074
NSG 7282	1518
NSG 7283	2795
NSG 7284	2345
NSG 7285	2346
NSG 7286	3013
NSG 7287	1722
NSG 7288	2055
NSG 7289	3602
NSG 7290	1764
NSG 7291	1723
NSG 7292	2752
NSG 7293	2563
NSG 7294	1571
NSG 7295	1519
NSG 7296	2669
NSG 7297	2533
NSG 7298	3396
NSG 7299	1901
NSG 7300	3487
NSG 7301	3166
NSG 7302	2796
NSG 7303	2056
NSG 7304	2402
NSG 7308	2631
NSG 7309	1915
NSG 7310	1999
NSG 7311	3861
NSG 7312	2000
NSG 7313	3783
NSG 7314	1220
NSG 7315	1520
NSG 7316	1208
NSG 7317	3859
NSG 7318	3784
NSG 7319	1724
NSG 7320	3014
NSG 7321	2956
NSG 7322	2347
NSG 7323	2001
NSG 7324	2921
NSG 7325	2357
NSG 7326	3541
NSG 7327	2799
NSG 7328	2534
NSG 7329	2535
NSG 7330	1630
NSG 7331	2536
NSG 7332	2403
NSG 7333	1149
NSG 7334	2727
NSG 7335	1521
NSG 7336	1451
NSG 7337	1867
NSG 7338	2537
NSG 7339	2538
NSG 7340	2348
NSG 7341	1522
NSG 7342	1209
NSG 7343	3378
NSG 7344	1725
NSG 7345	2975
NSG 7346	2821
NSG 7347	3542
NSG 7348	2922
NSG 7349	3849
NSG 7350	3279
NSG 7351	2198
NSG 7352	3133
NSG 7353	2987
NSG 7354	1748
NSG 7355	3707
NSG 7356	2057
NSG 7357	2226
NSG 7358	1150
NSG 7359	3026
NSG 7360	3204
NSG 7361	3420
NSG 7362	3421
NSG 7363	3543
NSG 7364	3704
NSG 7365	2349
NSG 7366	3025
NSG 7367	1647
NSG 7368	1151
NSG 7369	2976
NSG 7370	3461
NSG 7371	3544
NSG 7372	2728
NSG 7373	3860
NSG 7374	1152
NSG 7375	1465
NSG 7376	1210
NSG 7377	1572
NSG 7378	1840
NSG 7379	2797
NSG 7381	3545
NSG 7382	2271
NSG 7385	2359
NSG 7386	3422
NSG 7387	1211
NSG 7388	3603
NSG 7389	2093
NSG 7390	3836
NSG 7391	2404
NSG 7392	2560
NSG 7394	2027
NSG 7395	1385
NSG 7396	2539
NSG 7397	2554
NSG 7398	2405
NSG 7401	1452
NSG 7403	2002
NSG 7404	2632
NSG 7405	2555
NSG 7406	1573
NSG 7407	1523
NSG 7408	3546
NSG 7409	3852
NSG 7410	3488
NSG 7411	2761
NSG 7412	2163
NSG 7413	3368
NSG 7414	3315
NSG 7415	1090
NSG 7416	3616
NSG 7417	3462
NSG 7418	3574
NSG 7419	1153
NSG 7420	2227
NSG 7422	1783
NSG 7423	2003
NSG 7424	3167
NSG 7425	3592
NSG 7427	2350
NSG 7428	2540
NSG 7429	1091
NSG 7430	1726
NSG 7431	3168
NSG 7432	2541
NSG 7433	1982
NSG 7434	2888
NSG 7435	3465
NSG 7436	1154
NSG 7438	2542
NSG 7440	3489
NSG 7441	2221
NSG 7442	1212
NSG 7443	2004
NSG 7444	3155
NSG 7445	2923
NSG 7447	1075
NSG 7448	3785
NSG 7449	2272
NSG 7450	1757
NSG 7452	2633
NSG 7453	3605

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GRANT/ CONTRACT NUMBER	ACC NO.
NSG 7454	3029
NSG 7455	1453
NSG 7456	1230
NSG 7457	3190
NSG 7458	1213
NSG 7459	1727
NSG 7460	1728
NSG 7461	2406
NSG 7462	2005
NSG 7463	3379
NSG 7464	2058
NSG 7465	3280
NSG 7466	2889
NSG 7467	2543
NSG 7468	2360
NSG 7470	2356
NSG 7471	2164
NSG 7472	1466
NSG 7474	1574
NSG 7475	3169
NSG 7477	1729
NSG 7490	3423
NSG 8001	1002
NSG 8019	1923
NSG 8020	1970
NSG 8025	2231
NSG 8026	2675
NSG 8027	1975
NSG 8029	2232
NSG 8030	1971
NSG 8032	3339
NSG 8033	1003
NSG 8035	3334
NSG 8036	2673
NSG 8037	1004
NSG 8038	1038
NSG 8039	1972
NSG 8040	2988
NSG 8041	1005
NSG 8042	1006
NSG 8043	1973
NSG 8044	3320
NSG 8045	3041
NSG 8046	2199
NSG 8047	1030
NSG 8048	1978
NSG 8049	1974
NSG 8050	2242
NSG 8051	1007
NSG 8053	2233
NSG 8054	1039
NSG 8055	2715
NSG 8056	2234
NSG 8057	1008
NSG 8060	3335
NSG 8061	2732
NSG 8062	1009
NSG 8064	1010
NSG 9006	3400
NSG 9010	1841
NSG 9013	3015
NSG 9016	2676
NSG 9019	1214
NSG 9020	1600
NSG 9021	3547
NSG 9026	3575
NSG 9028	2989
NSG 9030	2235
NSG 9032	3786
NSG 9033	3397
NSG 9036	1730
NSG 9038	3394
NSG 9039	3424
NSG 9042	3490
NSG 9043	3493
NSG 9044	3016
NSG 9045	1680
NSG 9047	2634
NSG 9048	1575
NSG 9049	3576
NSG 9050	2670
NSG 9051	1751
NSG 9052	3787
NSG 9054	2407
NSG 9055	2729
NSG 9056	3306
NSG 9057	2544
NSG 9059	2850
NSG 9060	2165
NSG 9062	3571
NSG 9063	3706
NSG 9064	3395
NSG 9065	2800
NSG 9068	1092
NSG 9069	2556
NSG 9070	3398
NSG 9071	2006
NSG 9072	2094
NSG 9073	2730
NSR 24-005-245	2671
W-14108	1576
W-14133	2085

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APPENDIX B
CROSS INDEX BY FIELD OF SCIENCE AND ENGINEERING

The Fields used here are specified by Amendment J, "Standard Classification of Fields of Science and Engineering," to Office of Management and Budget (OMB) Circular A-46, "Standards for Statistical Surveys." Field codes are interpreted as follows:

PHYSICAL SCIENCES

11 ASTRONOMY
12 CHEMISTRY
13 PHYSICS
19 PHYSICAL SCIENCES, NEC*

MATHEMATICS/COMP SCI

21 MATHEMATICS
22 COMPUTER SCIENCES

ENVIRONMENTAL SCIENCES (Terrestrial and extraterrestrial)

31 ATMOSPHERIC SCIENCES
32 GEOLOGICAL SCIENCES
33 OCEANOGRAPHY
39 ENVIRONMENTAL SCIENCES, NEC*

ENGINEERING

41 AERONAUTICAL
42 ASTRONAUTICAL
43 CHEMICAL
44 CIVIL
45 ELECTRICAL
46 MECHANICAL
47 METALLURGY AND MATERIALS
49 ENGINEERING, NEC*

LIFE SCIENCES

51 BIOLOGY
52 CLINICAL MEDICAL
53 OTHER MEDICAL
59 LIFE SCIENCES, NEC*

PSYCHOLOGICAL

61 BIOLOGICAL
62 SOCIAL ASPECTS
69 PSYCHOLOGICAL, NEC*

SOCIAL SCIENCES

71 ANTHROPOLOGY
72 ECONOMICS
73 HISTORY
74 LINGUISTICS
75 POLITICAL SCIENCE
76 SOCIOLOGY
79 SOCIAL SCIENCE, NEC*

*OTHER SCIENCES***

99 ALL DISCIPLINE(S)

*Not Elsewhere Classified (For interdisciplinary projects and others not listed by discipline name)
**For interdisciplinary projects which cannot be classified within any of the preceding main fields

Abbreviations used in the "Technical Officer Locations" column are discussed in the prefatory pages.

FIELD CODE	INSTITUTION	TECHNICAL OFFICER	TECH OFF LOC	FIRST PRINCIPAL INVESTIGATOR	GRANT/ CONTRACT NUMBER	ACC NO.
11	ALABAMA A&M UNIV	Parnell, T. A.	MSFC	George, M. C.	NSG 8001	1002
11	AMERICAN UNIVERSITY	Brunk, W. E.	HQ-SL	Prakash, A.	NSG 7274	1777
11	BELOIT COLLEGE	O'Dell, C. R.	MSFC	Schroeder, D. J.	NAS 8-32901	3794
11	BOWIE STATE COLLEGE	Kniffen, D. A.	GSFC	Walker, R. P.	NGR 21-027-001	2243
11	BOWLING GRN STATE U	Roman, N. G.	HQ-SC	Ptak, R. L.	NSG 7022	3060
11	CALIF INST OF TECH	Hall, C. F.	ARC	Munch, G.	NAS 2-6556	1162
11	CALIF INST OF TECH	Haughney, L. C.	ARC	Werner, M. W.	NGR 05-002-281	1187
11	CALIF INST OF TECH	Neupert, W. M.	GSFC	Zirin, H.	NAS 5-22939	1165
11	CALIF INST OF TECH	Wende, C. D.	GSFC	Garmire, G. P.	NAS 5-23315	1167
11	CALIF INST OF TECH	Bissell, E. E.	GSFC	Garmire, G. P.	NGR 05-002-284	1188
11	CALIF INST OF TECH	Kupperian, J. E., Jr.	GSFC	Garmire, G. P.	NSG 5197	1196
11	CALIF INST OF TECH	Kupperian, J. E., Jr.	GSFC	Neugebauer, G.	NSG 5208	1197
11	CALIF INST OF TECH	Boggess, A.	GSFC	Greenstein, J. L.	NSG 5243	1199
11	CALIF INST OF TECH	Boggess, A.	GSFC	Schmidt, M.	NSG 5244	1200
11	CALIF INST OF TECH	Talley, D.	MSFC	Stone, E. C.	NAS 8-27978	1170
11	CALIF INST OF TECH	Roman, N. G.	HQ-SC	Oke, J. B.	NGL 05-002-134	1176
11	CALIF INST OF TECH	Boggess, N. W.	HQ-SC	Neugebauer, G.	NGL 05-002-207	1180
11	CALIF INST OF TECH	Fishman, G. J.	HQ-SC	Vogt, R. E.	NGR 05-002-160	1185
11	CALIF INST OF TECH	Roman, N. G.	HQ-SC	Thorne, K. S.	NGR 05-002-256	1186
11	CALIF INST OF TECH	Brunk, W. E.	HQ-SL	Muhleman, D. O.	NGL 05-002-003	1172
11	CALIF INST OF TECH	Brunk, W. E.	HQ-SL	Goldreich, P.	NGL 05-002-140	1177
11	CALIF INST OF TECH	Brunk, W. E.	HQ-SL	Muhleman, D. O.	NGR 05-002-114	1182
11	CALIF INST OF TECH	Bohlin, J. D.	HQ-ST	Zirin, H.	NGL 05-002-034	1173
11	CASE WESTERN RESERVE	Kupperian, J. E., Jr.	GSFC	Bidelman, W. P.	NSG 5136	3091
11	CITY COLLEGE OF N Y	Canuto, V.	GSFC	Erlbach, E.	NGL 33-013-040	2840
11	COLUMBIA UNIVERSITY	Stouffer, C. G.	GSFC	Novick, R.	NAS 5-24457	2855
11	COLUMBIA UNIVERSITY	Bissell, E. E.	GSFC	Novick, R.	NGR 33-008-102	2862
11	COLUMBIA UNIVERSITY	Thaddeus, P.	GSFC	Hartmann, S. R.	NGR 33-008-191	2866
11	COLUMBIA UNIVERSITY	Kupperian, J. E., Jr.	GSFC	Wolff, R. S.	NSG 5079	2873
11	COLUMBIA UNIVERSITY	Kupperian, J. E., Jr.	GSFC	Wolff, R. S.	NSG 5118	2875

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APPENDIX B CROSS INDEX BY FIELD OF SCIENCE AND ENGINEERING

FIELD CODE	INSTITUTION	TECHNICAL OFFICER	TECH OFF LOC	FIRST PRINCIPAL INVESTIGATOR	GRANT/ CONTRACT NUMBER	ACC NO.
11	COLUMBIA UNIVERSITY	Thaddeus, P.	GSFC	Happner, W.	NSG 5163	2877
11	COLUMBIA UNIVERSITY	Kupperian, J. E., Jr.	GSFC	Hayes, D. P.	NSG 5168	2878
11	COLUMBIA UNIVERSITY	Kupperian, J. E., Jr.	GSFC	Novick, R.	NSG 5194	2879
11	COLUMBIA UNIVERSITY	Kupperian, J. E., Jr.	GSFC	Novick, R.	NSG 5200	2880
11	COLUMBIA UNIVERSITY	Manning, H. S.	MSFC	Novick, R.	NAS 8-30753	2858
11	COLUMBIA UNIVERSITY	Dailey, C. C.	MSFC	Novick, R.	NAS 8-33085	2860
11	COLUMBIA UNIVERSITY	Boggess, N. W.	HQ-SC	Green, S.	NSG 7105	2884
11	COLUMBIA UNIVERSITY	Sofia, S.	HQ-SC	Weisskopf, M. C.	NSG 7248	2887
11	COLUMBIA UNIVERSITY	Timothy, A. F.	HQ-ST	Wolff, R. S.	NGR 33-008-189	2865
11	COLUMBIA UNIVERSITY	Timothy, A. F.	HQ-ST	Novick, R.	NSG 7075	2883
11	CONCORDIA COL-MOORHD	Berg, O. E.	GSFC	Bailey, C. F.	NAS 5-23557	2638
11	CORNELL UNIVERSITY	Pollack, J. B.	ARC	Burns, J. A.	NCA 2-175801	2895
11	CORNELL UNIVERSITY	Haughney, L. C.	ARC	Houck, J. R.	NGR 33-010-081	2899
11	CORNELL UNIVERSITY	Cameron, R. M.	ARC	Harwit, M. O.	NGR 33-010-146	2902
11	CORNELL UNIVERSITY	Cameron, R. M.	ARC	Houck, J. R.	NGR 33-010-182	2905
11	CORNELL UNIVERSITY	Haughney, L. C.	ARC	Elliot, J. L.	NSG 2174	2911
11	CORNELL UNIVERSITY	Gillespie, C. M., Jr.	ARC	Harwit, M. O.	NSG 2262	2912
11	CORNELL UNIVERSITY	Boggess, N. W.	HQ-SC	Harwit, M. O.	NGR 33-010-172	2904
11	CORNELL UNIVERSITY	Boggess, N. W.	HQ-SC	Houck, J. R.	NSG 7324	2921
11	CORNELL UNIVERSITY	Brunk, W. E.	HQ-SL	Veverka, J.	NSG 7126	2917
11	FLORIDA STATE UNIV	Brunk, W. E.	HQ-SL	Hunt, R. H.	NGR 10-004-056	1865
11	FLORIDA TECH UNIV	Hobbs, R. W.	GSFC	Katzin, J. C.	NSG 5110	1873
11	GEORGE MASON UNIV	Hobbs, R. W.	GSFC	Kafatos, M.	NCA 5-92	3619
11	HARVARD UNIVERSITY	Hall, C. F.	ARC	Goody, R. M.	NAS 2-9127	2368
11	HARVARD UNIVERSITY	Kupperian, J. E., Jr.	GSFC	Flannery, B. P.	NSG 5143	2391
11	HARVARD UNIVERSITY	Kupperian, J. E., Jr.	GSFC	Dupree, A. K.	NSG 5191	2394
11	HARVARD UNIVERSITY	Kupperian, J. E., Jr.	GSFC	Dupree, A. K.	NSG 5226	2395
11	HARVARD UNIVERSITY	Boggess, A.	GSFC	Dupree, A. K.	NSG 5229	2397
11	HARVARD UNIVERSITY	Boggess, A.	GSFC	Dupree, A. K.	NSG 5239	2398
11	HARVARD UNIVERSITY	Kupperian, J. E., Jr.	GSFC	Dupree, A. K.	NSG 5293	2399
11	HARVARD UNIVERSITY	Snoddy, W. C.	MSFC	Noyes, R. W.	NAS 5-3949	2369
11	HARVARD UNIVERSITY	Carter, C. H.	HQ-LU	Field, G. B.	NSG 7176	2401
11	HARVARD UNIVERSITY	Boggess, N. W.	HQ-SC	Fazio, G. G.	NGR 22-007-270	2385
11	HARVARD UNIVERSITY	Opp, A. G.	HQ-SC	Cameron, A. G.	NGR 22-007-272	2386
11	HARVARD UNIVERSITY	Brunk, W. E.	HQ-SL	Goody, R. M.	NSG 7332	2403
11	HARVARD UNIVERSITY	Bohlin, J. D.	HQ-ST	Parkinson, W. H.	NGR 22-007-202	2383
11	HARVARD UNIVERSITY	Bohlin, J. D.	HQ-ST	Parkinson, W. H.	NSG 7461	2406
11	HOUSTON BAPTIST UNIV	Kupperian, J. E., Jr.	GSFC	Morgan, T. H.	NSG 5188	3393
11	HOUSTON BAPTIST UNIV	Kondo, Y.	JSC	Modisette, J. L.	NGR 44-081-001	3391
11	HOUSTON BAPTIST UNIV	Kondo, Y.	JSC	Modisette, J. L.	NGR 44-081-005	3392
11	HOUSTON BAPTIST UNIV	Potter, A. E.	JSC	Morgan, T. H.	NSG 9038	3394
11	INDIANA U-BLOOMINGTN	Hobbs, R. W.	GSFC	Burkhead, M. S.	NAS 5-22987	2089
11	INDIANA U-BLOOMINGTN	Dailey, C. C.	MSFC	Mufson, S. L.	NAS 8-33087	2090
11	IOWA STATE UNIV	Kupperian, J. E., Jr.	GSFC	Lamb, R. C.	NSG 5199	2144
11	IOWA STATE UNIV	Dailey, C. C.	MSFC	Lamb, R. C.	NAS 8-33013	2128
11	JOHNS HOPKINS UNIV	Boggess, A.	GSFC	Fastie, W. G.	NAS 5-23316	2251
11	JOHNS HOPKINS UNIV	Wilson, L.	GSFC	Fastie, W. G.	NAS 5-24236	2253
11	JOHNS HOPKINS UNIV	Bissell, E. E.	GSFC	Fastie, W. G.	NGR 21-001-001	2257
11	JOHNS HOPKINS UNIV	Kupperian, J. E., Jr.	GSFC	Moos, H. W.	NSG 5184	2264
11	JOHNS HOPKINS UNIV	Kupperian, J. E., Jr.	GSFC	Moos, H. W.	NSG 5230	2267
11	JOHNS HOPKINS UNIV	Boggess, A.	GSFC	Moos, H. W.	NSG 5255	2268
11	JOHNS HOPKINS UNIV	O'Dell, C. R.	MSFC	Fastie, W. G.	NAS 8-32903	2256
11	JOHNS HOPKINS UNIV	Opp, A. G.	HQ-SC	Davidsen, A. F.	NSG 7449	2272
11	JOHNS HOPKINS UNIV	Donn, B. D.	HQ-SL	Feldman, P. D.	NSG 7382	2271
11	LEHIGH UNIVERSITY	Potter, A. E.	JSC	McCluskey, G. E., Jr.	NGR 39-007-061	3234
11	LA STATE U-SHREVEPT	Giuli, R. T.	JSC	Moss, T. A.	NAS 9-9317	2225
11	MASS INST OF TECH	Hall, C. F.	ARC	Pettengill, G. H.	NAS 2-9473	2414
11	MASS INST OF TECH	Hall, C. F.	ARC	Pettengill, G. H.	NAS 2-9476	2415

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11	MASS INST OF TECH	Hall, C. F.	ARC	Shapiro, I. I.	NAS 2-9483	2416
11	MASS INST OF TECH	Haughney, L. C.	ARC	Kleinman, S. G.	NSG 2172	2495
11	MASS INST OF TECH	Gillespie, C. M., Jr.	ARC	Wright, E. L.	NSG 2263	2499
11	MASS INST OF TECH	Rice, C. F.	GSFC	Clark, G. W.	NAS 5-11450	2419
11	MASS INST OF TECH	Shiue, J. C.	GSFC	Staelin, D. H.	NAS 5-23677	2423
11	MASS INST OF TECH	Mather, J. C.	GSFC	Weiss, R.	NAS 5-24096	2424
11	MASS INST OF TECH	Kupperian, J. E., Jr.	GSFC	Clark, G. W.	NAS 5-24441	2426
11	MASS INST OF TECH	Nace, D. A.	GSFC	Weiss, R.	NAS 5-24493	2427
11	MASS INST OF TECH	Bissell, E. E.	GSFC	Rappaport, S. A.	NGR 22-009-730	2466
11	MASS INST OF TECH	Hansen, J. E.	GSFC	Rivas, E. K.	NSG 5076	2517
11	MASS INST OF TECH	Stone, R. G.	GSFC	Burke, B. F.	NSG 5150	2519
11	MASS INST OF TECH	Manning, H. S.	MSFC	Bradt, H. V.	NAS 8-27972	2429
11	MASS INST OF TECH	Manning, H. S.	MSFC	Lewin, W. H.	NAS 8-27975	2430
11	MASS INST OF TECH	Meyers, C. H.	MSFC	Clark, G. W.	NAS 8-30752	2432
11	MASS INST OF TECH	Boggess, N. W.	HQ-SC	Weiss, R.	NGR 22-009-526	2456
11	MASS INST OF TECH	Boggess, N. W.	HQ-SC	Kleinmann, S.	NSG 7186	2530
11	MASS INST OF TECH	Boggess, N. W.	HQ-SC	Weiss, R.	NSG 7328	2534
11	MASS INST OF TECH	Opp, A. G.	HQ-SC	Lewin, W. G.	NSG 7339	2538
11	MASS INST OF TECH	Smith, M. J.	HQ-SL	McCord, T. B.	NASW 3008	2440
11	MASS INST OF TECH	Fellows, R. F.	HQ-SL	McCord, T. B.	NGR 22-009-583	2459
11	MASS INST OF TECH	Brunk, W. E.	HQ-SL	Pettengill, G. H.	NGR 22-009-672	2462
11	MIDDLEBURY COLLEGE	Kupperian, J. E., Jr.	GSFC	Winkler, P. F.	NSG 5198	3604
11	MONTANA STATE UNIV	Roman, N. G.	HQ-SC	Nordtvedt, K., Jr.	NGR 27-001-040	2731
11	MONTGOMERY COLLEGE	Fischel, D.	GSFC	Fahey, P. P.	NAS 5-25120	2273
11	MORGAN STATE UNIV	Baker, G. R.	GSFC	Hammond, E. C., Jr.	NSG 5074	2276
11	NEW MEX INST MINING	Hobbs, R. W.	GSFC	Moore, E.	NCA 5-64	2804
11	NEW MEX INST MINING	Hobbs, R. W.	GSFC	Moore, E.	NCA 5-67	2805
11	NEW MEX INST MINING	Hobbs, R. W.	GSFC	Moore, E.	NCA 5-68	2806
11	NEW MEX INST MINING	Hobbs, R. W.	GSFC	Moore, E.	NCA 5-69	2807
11	NEW MEX INST MINING	Hobbs, R. W.	GSFC	Moore, E.	NCA 5-71	2808
11	NEW MEX INST MINING	Hobbs, R. W.	GSFC	Ford, K. W.	NCA 5-72	2809
11	NEW MEX INST MINING	Jones, H. P.	GSFC	Moore, E. P.	NCA 5-78	2810
11	NEW MEX ST U-LAS CR	Brunk, W. E.	HQ-SL	Beebe, R. F.	NGL 32-003-001	2819
11	NEW MEX ST U-LAS CR	Donn, B. D.	HQ-SL	Beebe, H. A.	NSG 7346	2821
11	NEW YORK UNIVERSITY	Hall, C. F.	ARC	Weinberg, J. L.	NAS 2-7963	2926
11	NORTHWESTERN UNIV	Kupperian, J. E., Jr.	GSFC	Ulmer, M. P.	NSG 5196	2024
11	NORTHWESTERN UNIV	Dailey, C. C.	MSFC	Ulmer, M. P.	NAS 8-33010	2014
11	NORTHWESTERN UNIV	Roman, N. G.	HQ-SC	Huang, S. S.	NGL 14-007-041	2015
11	OHIO STATE UNIV	Kupperian, J. E., Jr.	GSFC	Collins, G. W., II	NSG 5140	3126
11	OHIO STATE UNIV	Kupperian, J. E., Jr.	GSFC	Slettebak, A. E.	NSG 5141	3127
11	OHIO STATE UNIV	Boggess, A.	GSFC	Wing, R. F.	NSG 5247	3128
11	OHIO STATE UNIV	Kupperian, J. E., Jr.	GSFC	Slettebak, A. E.	NSG 5299	3131
11	PAN AMERICAN UNIV	Pieters, C.	JSC	Glaser, F. M.	NSG 9070	3398
11	PRINCETON UNIVERSITY	Kupperian, J. E., Jr.	GSFC	Spitzer, L., Jr.	NAS 5-1810	2764
11	PRINCETON UNIVERSITY	Sobieski, S.	GSFC	Lowrance, J.	NAS 5-20833	2765
11	PRINCETON UNIVERSITY	Kelsall, T.	GSFC	Schwarzschild, M.	NAS 5-22989	2767
11	PRINCETON UNIVERSITY	Kelsall, T.	GSFC	Lowrance, J.	NAS 5-23387	2768
11	PRINCETON UNIVERSITY	Gemmell, J. D.	GSFC	Spitzer, L., Jr.	NAS 5-23576	2769
11	PRINCETON UNIVERSITY	Mather, J. C.	GSFC	Wilkinson, D. T.	NAS 5-24100	2770
11	PRINCETON UNIVERSITY	Nace, D. A.	GSFC	Wilkinson, D. T.	NAS 5-24486	2771
11	PRINCETON UNIVERSITY	Hobbs, R. W.	GSFC	Groth, E. J.	NAS 5-25084	2772
11	PRINCETON UNIVERSITY	Boggess, A.	GSFC	Jenkins, E. B.	NSG 5248	2790
11	PRINCETON UNIVERSITY	Harris, J. W.	JSC	Hollister, L. S.	NGL 31-001-283	2778
11	PRINCETON UNIVERSITY	Roman, N. G.	HQ-SC	Spitzer, L., Jr.	NGL 31-001-007	2776
11	PRINCETON UNIVERSITY	Roman, N. G.	HQ-SC	Bahcall, N. A.	NSG 7256	2793
11	PRINCETON UNIVERSITY	Boggess, N. W.	HQ-SC	Wilkinson, D.	NSG 7302	2796
11	PRINCETON UNIVERSITY	Rosendhal, J. D.	HQ-SC	Schwarzschild, M.	NSG 7379	2797
11	PURDUE UNIVERSITY	Rosendhal, J. D.	HQ-SC	Moffett, T. J.	NSG 7167	2118

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11	RICE UNIVERSITY	Ballance, C. W., Jr.	WFC	Anderson, H. R., Jr.	NAS 6-1667	3404
11	RICE UNIVERSITY	Sofia, S.	HQ-SC	Clayton, D. D.	NSG 7015	3416
11	RUTGERS U-N BRUNSWK	Kupperian, J. E., Jr.	GSFC	Matilsky, T. A.	NSG 5195	2798
11	SAN JOSE STATE UNIV	Pollack, J. B.	ARC	Riegel, C. A.	NSG 2047	1257
11	SO UNIV-BATON ROUGE	Estabrook, F. B.	JPL	Yang, C. H.	NGR 19-005-006	2229
11	STANFORD UNIVERSITY	Barnes, A.	ARC	Tyler, G. L.	NCA 2-745811	1316
11	STANFORD UNIVERSITY	Snoddy, W. C.	MSFC	Underwood, J. H.	NAS 8-32263	1297
11	STANFORD UNIVERSITY	Dailey, C. C.	MSFC	Walker, A. B., Jr.	NAS 8-33012	1301
11	STANFORD UNIVERSITY	Opp, A. G.	HQ-SC	Hofstadter, R.	NGR 05-020-452	1331
11	STANFORD UNIVERSITY	Opp, A. G.	HQ-SC	Sturrock, P. A.	NGR 05-020-668	1338
11	STANFORD UNIVERSITY	Roman, N. G.	HQ-SC	Will, C. M.	NSG 7204	1384
11	STANFORD UNIVERSITY	Brunk, W. E.	HQ-SL	Tyler, G. L.	NSG 7395	1385
11	STANFORD UNIVERSITY	Bohlin, J. D.	HQ-ST	Wilcox, J. M.	NGR 05-020-559	1333
11	STANFORD UNIVERSITY	Bohlin, J. D.	HQ-ST	Petrosian, V.	NSG 7092	1381
11	STATE UNIV NY-ALBANY	Gary, G. A.	MSFC	Weinberg, J. L.	NSG 8040	2988
11	STATE UNIV NY-ALBANY	Roman, N. G.	HQ-SC	Weinberg, J. L.	NSG 7241	2986
11	STATE UNIV NY-ALBANY	Donn, B. D.	HQ-SL	Schuerman, D. W.	NSG 7353	2987
11	ST U NY COL-GENESEO	Roman, N. G.	HQ-SC	Meisel, D. D.	NGR 33-219-002	3018
11	STATE U NY-STONY BRK	Cameron, R. M.	ARC	Simon, M.	NSG 2264	3003
11	STATE U NY-STONY BRK	Kerr, A. R.	GSFC	Kao, Y. H.	NSG 5125	3006
11	STATE U NY-STONY BRK	Boggess, A.	GSFC	Owen, T.	NSG 5250	3007
11	STATE U NY-STONY BRK	O'Dell, C. R.	MSFC	Caldwell, J. J.	NAS 8-32904	2994
11	STATE U NY-STONY BRK	Fishman, G. J.	HQ-SC	Forman, M. A.	NGR 33-015-180	3002
11	STATE U NY-STONY BRK	Brunk, W. E.	HQ-SL	Owen, T.	NGR 33-015-141	2999
11	STATE U NY-STONY BRK	Brunk, W. E.	HQ-SL	Knacke, R. F.	NSG 7286	3013
11	STATE U NY-STONY BRK	Brunk, W. E.	HQ-SL	Caldwell, J. J.	NSG 7320	3014
11	STATE U NY-STONY BRK	Bohlin, J. D.	HQ-ST	Stroke, G. W.	NSG 7003	3009
11	UNIV OF LEIDEN	Grant, T. L.	ARC	VanDerLaan, H.	NSG 7264	3862
11	UNIV ALA-HUNTSVILLE	Parnell, T. A.	MSFC	Hiser, H. W.	NAS 8-24908	1043
11	UNIV ALA-HUNTSVILLE	Clifton, K. S.	MSFC	Stuhlinger, E.	NAS 8-32225	1055
11	UNIV OF ARIZONA	Hall, C. F.	ARC	Gehrels, A. M.	NAS 2-6265	1095
11	UNIV OF ARIZONA	Hall, C. F.	ARC	Tomasko, M. G.	NAS 2-9486	1096
11	UNIV OF ARIZONA	Gillespie, C. M., Jr.	ARC	Harper, H. P.	NGR 03-002-332	1120
11	UNIV OF ARIZONA	Haughney, L. C.	ARC	Hoffman, W. F.	NGR 03-002-390	1124
11	UNIV OF ARIZONA	Billingham, J.	ARC	Serkowski, K. M.	NSG 2205	1126
11	UNIV OF ARIZONA	Wilson, L.	GSFC	Smith, B. A.	NAS 5-24308	1098
11	UNIV OF ARIZONA	Boggess, A.	GSFC	Imhoff, C. L.	NSG 5235	1130
11	UNIV OF ARIZONA	Boggess, A.	GSFC	Tomasko, M. G.	NSG 5249	1131
11	UNIV OF ARIZONA	Parnell, T. A.	MSFC	Sonett, C. P.	NAS 8-31192	1100
11	UNIV OF ARIZONA	Miller, E. R.	MSFC	Sonett, C. P.	NAS 8-31196	1101
11	UNIV OF ARIZONA	Griner, D. B.	MSFC	Slater, P. N.	NAS 8-32127	1103
11	UNIV OF ARIZONA	Roman, N. G.	HQ-SC	Bashkin, S.	NGL 03-002-017	1110
11	UNIV OF ARIZONA	Boggess, N. W.	HQ-SC	Low, F. J.	NGR 03-002-269	1119
11	UNIV OF ARZONA	Boggess, N. W.	HQ-SC	Hoffman, W. F.	NGR 03-002-371	1122
11	UNIV OF ARIZONA	Opp, A. G.	HQ-SC	Jokippi, J.	NSG 7101	1139
11	UNIV OF ARIZONA	Roman, N. G.	HQ-SC	Gehrels, A. M.	NSG 7358	1150
11	UNIV OF ARIZONA	Boggess, N. W.	HQ-SC	Craine, E. R.	NSG 7368	1151
11	UNIV OF ARIZONA	Dwornik, S. E.	HQ-SL	Strom, R. G.	NASW 2944	1106
11	UNIV OF ARIZONA	Brunk, W. E.	HQ-SL	Smith, B. A.	NGL 03-002-002	1109
11	UNIV OF ARIZONA	Brunk, W. E.	HQ-SL	Gehrels, T.	NGL 03-002-081	1112
11	UNIV OF ARIZONA	Brunk, W. E.	HQ-SL	Cox, E. L.	NGL 03-002-122	1113
11	UNIV OF ARIZONA	Brunk, W. E.	HQ-SL	Gehrels, A. M.	NGR 03-002-219	1118
11	UNIV OF ARIZONA	Brunk, W. E.	HQ-SL	Hubbard, W. B.	NSG 7045	1137
11	UNIV OF ARIZONA	Brunk, W. E.	HQ-SL	Fink, U. W.	NSG 7070	1138
11	UNIV OF ARIZONA	Brunk, W. E.	HQ-SL	Rieke, G. H.	NSG 7114	1140
11	UNIV OF ARIZONA	Brunk, W. E.	HQ-SL	Hubbard, W. B.	NSG 7238	1145
11	UNIV OF ARIZONA	Donn, B. D.	HQ-SL	Hsieh, K. C.	NSG 7374	1152
11	UNIV ARKANSAS-FAYETV	Rosendhal, J. D.	HQ-SC	Hughes, R. H.	NSG 7106	1159

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11	UNIV CALIF-BERKELEY	Caroff, L. J.	ARC	Silk, J. I.	NCA 2-50711	1406
11	UNIV CALIF-BERKELEY	Haughney, L. C.	ARC	Townes, C. H.	NGR 05-003-511	1425
11	UNIV CALIF-BERKELEY	Vorreiter, J. W.	ARC	Richards, P. L.	NSG 2280	1436
11	UNIV CALIF-BERKELEY	Mather, J. C.	GSFC	Alvarez, L. W.	NAS 5-24105	1390
11	UNIV CALIF-BERKELEY	Willis, S. E.	GSFC	Bowyer, C. S.	NAS 5-24189	1393
11	UNIV CALIF-BERKELEY	Willis, S. E.	GSFC	Bowyer, C. S.	NAS 5-24445	1394
11	UNIV CALIF-BERKELEY	Nice, D. A.	GSFC	Smoot, G.	NAS 5-25007	1395
11	UNIV CALIF-BERKELEY	Leckrone, D.	GSFC	King, I.	NAS 5-25070	1396
11	UNIV CALIF-BERKELEY	Bissell, E. E.	GSFC	Bowyer, C. S.	NGR 05-003-450	1420
11	UNIV CALIF-BERKELEY	Kupperian, J. E., Jr.	GSFC	Bowyer, C. S.	NSG 5164	1440
11	UNIV CALIF-BERKELEY	Kupperian, J. E., Jr.	GSFC	Shull, J. M.	NSG 5201	1441
11	UNIV CALIF-BERKELEY	Kupperian, J. E., Jr.	GSFC	Bowyer, C. S.	NSG 5227	1442
11	UNIV CALIF-BERKELEY	Kupperian, J. E., Jr.	GSFC	Bowyer, C. S.	NSG 5292	1444
11	UNIV CALIF-BERKELEY	Marmann, R.	MSFC	Bowyer, C. S.	NAS 8-32577	1399
11	UNIV CALIF-BERKELEY	Dailey, C. C.	MSFC	Anderson, K. A.	NAS 8-33011	1400
11	UNIV CALIF-BERKELEY	Boggess, N. W.	HQ-SC	Townes, C. H.	NGL 05-003-272	1412
11	UNIV CALIF-BERKELEY	Sofia, S.	HQ-SC	Price, P. B.	NGR 05-003-376	1419
11	UNIV CALIF-BERKELEY	Sofia, S.	HQ-SC	Heckman, H. H.	NGR 05-003-513	1426
11	UNIV CALIF-BERKELEY	Fishman, G. J.	HQ-SC	Alvarez, L. W.	NGR 05-003-553	1427
11	UNIV CALIF-BERKELEY	Roman, N. G.	HQ-SC	Silk, J. I.	NGR 05-003-578	1429
11	UNIV CALIF-BERKELEY	Boggess, N. W.	HQ-SC	Richards, P. L.	NSG 7205	1447
11	UNIV CALIF-BERKELEY	Boggess, N. W.	HQ-SC	Smoot, G.	NSG 7455	1453
11	UNIV CALIF-BERKELEY	Brunk, W. E.	HQ-SL	Townes, C. H.	NGR 05-003-452	1422
11	UNIV CALIF-BERKELEY	Brunk, W. E.	HQ-SL	Welch, W. J.	NSG 7152	1446
11	UNIV CALIF-L ANGELES	Hall, C. F.	ARC	Kaula, W. M.	NAS 2-9128	1467
11	UNIV CALIF-L ANGELES	Hall, C. F.	ARC	Schubert, G.	NAS 2-9131	1468
11	UNIV CALIF-L ANGELES	Kupperian, J. E., Jr.	GSFC	Peters, C. J.	NSG 5056	1503
11	UNIV CALIF-L ANGELES	Kupperian, J. E., Jr.	GSFC	Jura, M. A.	NSG 5070	1504
11	UNIV CALIF-L ANGELES	Wende, C. D.	GSFC	Arozullah, M.	NSG 5149	1505
11	UNIV CALIF-L ANGELES	Kupperian, J. E., Jr.	GSFC	Margon, B. H.	NSG 5165	1506
11	UNIV CALIF-L ANGELES	Kupperian, J. E., Jr.	GSFC	Jura, M. A.	NSG 5169	1507
11	UNIV CALIF-L ANGELES	Boggess, A.	GSFC	Plavec, M.	NSG 5272	1510
11	UNIV CALIF-L ANGELES	Opp, A. G.	HQ-SC	Kennel, C. F.	NSG 7341	1522
11	UNIV CALIF-RIVERSIDE	Fishman, G.	HQ-SC	White, R. S.	NGR 05-008-022	1525
11	UNIV CALIF-SAN DIEGO	Hall, C. F.	ARC	Fillius, R. W.	NAS 2-6552	1526
11	UNIV CALIF-SAN DIEGO	Haughney, L. C.	ARC	Soifer, B. T.	NGR 05-005-055	1549
11	UNIV CALIF-SAN DIEGO	Stouffer, G. G.	GSFC	Peterson, L. E.	NAS 5-22375	1529
11	UNIV CALIF-SAN DIEGO	Bartlett, R. O.	GSFC	McIlwain, C. E.	NAS 5-23481	1530
11	UNIV CALIF-SAN DIEGO	Wrublik, D.	GSFC	Harms, R. J.	NAS 5-24463	1532
11	UNIV CALIF-SAN DIEGO	Shannon, J. L., Jr.	GSFC	Beaver, E. A.	NAS 5-24466	1533
11	UNIV CALIF-SAN DIEGO	Shannon, J. L., Jr.	GSFC	Beaver, E. A.	NAS 5-25054	1534
11	UNIV CALIF-SAN DIEGO	Neuschaefer, R.	MSFC	Peterson, L. E.	NAS 8-27974	1536
11	UNIV CALIF-SAN DIEGO	Stanley, R.	WFC	Hendershott, M.	NAS 6-2506	1535
11	UNIV CALIF-SAN DIEGO	Rosendhal, J. D.	HQ-SC	Gould, R. J.	NGL 05-005-004	1540
11	UNIV CALIF-SAN DIEGO	Rosendhal, J. D.	HQ-SC	McIlwain, C. E.	NGR 05-009-188	1553
11	UNIV CALIF-SAN DIEGO	Opp, A. G.	HQ-SC	Peterson, L. E.	NSG 7294	1571
11	UNIV CALIF-SAN DIEGO	Burbidge, E.	HQ-SC	Burbidge, M.	NSG 7377	1572
11	UNIV CALIF-SAN DIEGO	Donn, B. D.	HQ-SL	Alfven, H.	NGR 05-009-110	1552
11	UNIV CALIF-S CRUZ	Boggess, N. W.	HQ-SC	Rank, D. M.	NGR 05-061-015	1601
11	UNIV OF CHICAGO	Hall, C. F.	ARC	Simpson, J. A.	NAS 2-6551	2028
11	UNIV OF CHICAGO	Smith, B. F.	ARC	Miller, R. H.	NCA 2-108801	2033
11	UNIV OF CHICAGO	Cameron, R. M.	ARC	Harper, D. A., Jr.	NGR 14-001-211	2046
11	UNIV OF CHICAGO	Gillespie, C. M., Jr.	ARC	Harper, D. A., Jr.	NGR 14-001-227	2048
11	UNIV OF CHICAGO	Gillespie, C. M., Jr.	ARC	Hildebrand, R. H.	NSG 2057	2050
11	UNIV OF CHICAGO	Cameron, R. M.	ARC	Hildebrand, R. H.	NSG 2261	2051
11	UNIV OF CHICAGO	Kupperian, J. E., Jr.	GSFC	Simpson, J. A.	NSG 5202	2052
11	UNIV OF CHICAGO	Kupperian, J. E., Jr.	GSFC	Simpson, J. A.	NSG 5291	2053
11	UNIV OF CHICAGO	Fishman, G. J.	HQ-SC	Parker, E. N.	NGL 14-001-001	2034

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11	UNIV OF CHICAGO	Opp, A. G.	HQ-SC	Meyer, P.	NGL 14-001-005	2035
11	UNIV OF CHICAGO	Fishman, G. F.	HQ-SC	Simpson, J. A.	NGL 14-001-006	2036
11	UNIV OF CHICAGO	Rosendhal, J. D.	HQ-SC	Hobbs, L. M.	NGR 14-001-147	2044
11	UNIV COLORADO-BOLDR	Boggess, A.	GSFC	Conti, P. S.	NAS 5-22833	1686
11	UNIV COLORADO-BOLDR	Boggess, A.	GSFC	Linsky, J. L.	NAS 5-23274	1687
11	UNIV COLORADO-BOLDR	Alexander, J. K.	GSFC	Warwick, J. W.	NAS 5-23771	1688
11	UNIV COLORADO-BOLDR	Bissell, E. E.	GSFC	Barth, C. A.	NGR 06-003-069	1697
11	UNIV COLORADO-BOLDR	Bissell, E. E.	GSFC	Lillie, C. F.	NGR 06-003-176	1699
11	UNIV COLORADO-BOLDR	Kupperian, J. E., Jr.	GSFC	Conti, P. S.	NSG 5098	1707
11	UNIV COLORADO-BOLDR	Kupperian, J. E., Jr.	GSFC	Barlow, M. J.	NSG 5147	1710
11	UNIV COLORADO-BOLDR	Kupperian, J. E., Jr.	GSFC	Linsky, J. L.	NSG 5211	1713
11	UNIV COLORADO-BOLDR	Kupperian, J. E., Jr.	GSFC	Snow, T. P.	NSG 5246	1714
11	UNIV COLORADO-BOLDR	Boggess, A.	GSFC	Snow, T. P.	NSG 5300	1715
11	UNIV COLORADO-BOLDR	Bissell, E. E.	GSFC	Snow, T. P.	NSG 5303	1716
11	UNIV COLORADO-BOLDR	Bass, B. G.	MSFC	Dulk, G. A.	NAS 8-32364	1691
11	UNIV COLORADO-BOLDR	Dailey, C. C.	MSFC	Linsky, J. L.	NAS 8-33084	1692
11	UNIV COLORADO-BOLDR	Roman, N. G.	HQ-SC	Lillie, C. F.	NGR 06-003-179	1700
11	UNIV COLORADO-BOLDR	Opp, A. G.	HQ-SC	McCray, R.	NSG 7128	1717
11	UNIV COLORADO-BOLDR	Roman, N. G.	HQ-SC	Conti, P. S.	NSG 7430	1726
11	UNIV COLORADO-BOLDR	Roman, N. G.	HQ-SC	Snow, T. P.	NSG 7477	1729
11	UNIV DC-VAN NESS	Hobbs, R. W.	GSFC	Kasten, R.	NCA 5-77	1847
11	UNIV DC-VAN NESS	Hobbs, R. W.	GSFC	Kasten, R.	NCA 5-80	1848
11	UNIV OF DELAWARE	Kupperian, J. E., Jr.	GSFC	Shipman, H. L.	NSG 5144	1775
11	UNIV OF FLORIDA	Kupperian, J. E., Jr.	GSFC	Chen, K. W.	NSG 5116	1898
11	UNIV OF FLORIDA	Roman, N. G.	HQ-SC	Carr, T. D.	NSG 7143	1899
11	UNIV OF HAWAII-MANOA	White, W. W.	GSFC	Cushman, S. F.	NAS 5-25181	1983
11	UNIV OF HAWAII-MANOA	Bissell, E. E.	GSFC	Jefferies, J. T.	NGR 12-001-075	1990
11	UNIV OF HAWAII-MANOA	Kupperian, J. E., Jr.	GSFC	Boesgaard, A. M.	NSG 5096	1994
11	UNIV OF HAWAII-MANOA	Kupperian, J. E., Jr.	GSFC	Boesgaard, A. M.	NSG 5231	1997
11	UNIV OF HAWAII-MANOA	Weir, J. F.	HQ-BX	Jefferies, J. T.	NASW 2801	1984
11	UNIV OF HAWAII-MANOA	Brunk, W. E.	HQ-SL	Jefferies, J. T.	NASW 3159	1985
11	UNIV OF HAWAII-MANOA	Brunk, W. E.	HQ-SL	Jefferies, J. T.	NGL 12-001-057	1989
11	UNIV OF HAWAII-MANOA	Brunk, W. E.	HQ-SL	McCord, T. B.	NSG 7310	1999
11	UNIV OF HAWAII-MANOA	Brunk, W. E.	HQ-SL	McCord, T. B.	NSG 7323	2001
11	UNIV OF HAWAII-MANOA	Bohlin, J. D.	HQ-ST	Jefferies, J. T.	NGL 12-001-011	1987
11	UNIV HOUSTON-HOUSTON	Alexander, W. C.	JSC	Sheldon, W. R.	NAS 9-14209	3469
11	UNIV ILLINOIS-URBANA	Donn, B. D.	GSFC	Snyder, L. E.	NSG 5278	2082
11	UNIV ILLINOIS-URBANA	Kupperian, J. E., Jr.	GSFC	Crutcher, R. M.	NSG 5294	2083
11	UNIV ILLINOIS-URBANA	Brunk, W. E.	HQ-SL	Dickel, J. R.	NGR 14-005-176	2068
11	UNIV OF IOWA	Hall, C. F.	ARC	VanAllen, J. A.	NAS 2-6553	2146
11	UNIV OF IOWA	White, C.	GSFC	Gurnett, D. A.	NAS 5-11279	2148
11	UNIV OF IOWA	Brunk, W. E.	HQ-SL	Neff, J. S.	NSG 7412	2163
11	UNIV MARYLAND-BALT	Roman, N. G.	HQ-SC	Misner, C. W.	NGR 21-002-010	2277
11	UNIV MARYLAND-COL PK	Fischel, D.	GSFC	Harger, R. O.	NCA 5-11	2291
11	UNIV MARYLAND-COL PK	Fischel, D.	GSFC	Rosenfeld, A.	NCA 5-20	2293
11	UNIV MARYLAND-COL PK	Slade, W.	GSFC	Rosenfeld, A.	NCA 5-22	2294
11	UNIV MARYLAND-COL PK	Hobbs, R. W.	GSFC	Currie, D. G.	NCA 5-24	2295
11	UNIV MARYLAND-COL PK	Klinglesmith, D. A.	GSFC	Rosenfeld, A.	NCA 5-26	2296
11	UNIV MARYLAND-COL PK	Klinglesmith, D. A.	GSFC	Rosenfeld, A.	NCA 5-27	2297
11	UNIV MARYLAND-COL PK	Clark, T. A.	GSFC	Richard, J. P.	NSG 5035	2321
11	UNIV MARYLAND-COL PK	Ramaty, R.	GSFC	Wall, N. S.	NSG 5298	2338
11	UNIV MARYLAND-COL PK	Opp, A. G.	HQ-SC	Earl, J. A.	NGR 21-002-066	2303
11	UNIV MARYLAND-COL PK	Rosendhal, J. D.	HQ-SC	Griem, H. R.	NGR 21-002-073	2304
11	UNIV MARYLAND-COL PK	Opp, A. G.	HQ-SC	Gloeckler, G.	NGR 21-002-224	2307
11	UNIV MARYLAND-COL PK	Opp, A. G.	HQ-SC	Rose, W. K.	NSG 7252	2342
11	UNIV MARYLAND-COL PK	Rosendhal, J. D.	HQ-SC	Currie, D. G.	NSG 7284	2345
11	UNIV MARYLAND-COL PK	Donn, B. D.	HQ-SL	Opik, E. J.	NGR 21-002-002	2302
11	UNIV MARYLAND-COL PK	Brunk, W. E.	HQ-SL	A'Hearn, M. F.	NSG 7322	2347

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11	UNIV OF/MASS-AMHERST	Hall, C. F.	ARC	McGill, G. E.	NAS 2-9129	2549
11	UNIV OF MASS-AMHERST	Brunk, W. E.	HQ-SL	Irvine, W. M.	NGL 22-010-023	2550
11	UNIV OF MASS-AMHERST	Timothy, A. F.	HQ-ST	Strong, J.	NGL 22-010-025	2551
11	UNIV MICH-ANN ARBOR	Hall, C. F.	ARC	Donahue, T. M.	NAS 2-9126	2567
11	UNIV MICH-ANN ARBOR	Hall, C. F.	ARC	Nagy, A. F.	NAS 2-9130	2568
11	UNIV MICH-ANN ARBOR	Spencer, N. W.	GSFC	Carignan, G. R.	NAS 5-24135	2577
11	UNIV MICH-ANN ARBOR	Niemann, H. B.	GSFC	Carignan, G. R.	NAS 5-24454	2581
11	UNIV MICH-ANN ARBOR	Kupperian, J. E., Jr.	GSFC	Atreya, S. K.	NSG 5139	2621
11	UNIV MICH-ANN ARBOR	Kupperian, J. E., Jr.	GSFC	Donahue, T. M.	NSG 5206	2624
11	UNIV MICH-ANN ARBOR	Kupperian, J. E., Jr.	GSFC	Atreya, S. K.	NSG 5232	2625
11	UNIV MICH-ANN ARBOR	Rosendhal, J. D.	HQ-SC	Hiltner, W. A.	NGR 23-005-464	2603
11	UNIV MICH-ANN ARBOR	Tilford, S. G.	HQ-ST	Anderson, J. G.	NASW 3065	2596
11	UNIV MICH-ANN ARBOR	Bohlin, J. D.	HQ-ST	Mohler, O. C.	NGL 23-005-275	2598
11	U MINN-MNPLS-ST PAUL	Gemmell, J. D.	GSFC	Kellogg, P. J.	NAS 5-11310	2640
11	U MINN-MNPLS-ST PAUL	Barrowman, J. S.	GSFC	Waddington, C. J.	NAS 5-23684	2642
11	U MINN-MNPLS-ST PAUL	Stone, R. G.	GSFC	Kellogg, P. J.	NAS 5-25151	2644
11	U MINN-MNPLS-ST PAUL	Boggess, A.	GSFC	Black, J. H.	NSG 5237	2660
11	U MINN-MNPLS-ST PAUL	Talley, D.	MSFC	Waddington, C. J.	NAS 8-27977	2645
11	U MINN-MNPLS-ST PAUL	Sofia, S.	HQ-SC	Waddington, C. J.	NGR 24-005-050	2650
11	U MINN-MNPLS-ST PAUL	Boggess, N. W.	HQ-SC	Ney, E.	NSG 2014	2655
11	U MINN-MNPLS-ST PAUL	Roman, N. G.	HQ-SC	Gallagher, J. S.	NSG 7259	2668
11	U MINN-MNPLS-ST PAUL	Roman, N. G.	HQ-SC	Luyten, W. J.	NSR 24-005-245	2671
11	UNIV MO-ST LOUIS	Kupperian, J. E., Jr.	GSFC	Schwartz, R. D.	NSG 5151	2716
11	UNIV NEBRASKA-LINCLN	Kupperian, J. E., Jr.	GSFC	Schmidt, E. G.	NSG 5245	2740
11	UNIV NEW HAMP-DURHAM	Opp, A. G.	HQ-SC	Chupp, E. L.	NGL 30-002-021	2757
11	UNIV NEW HAMP-DURHAM	Fishman, G. J.	HQ-SC	Webber, W. R.	NGR 30-002-052	2758
11	UNIV OF NEW MEXICO	Temkin, A.	GSFC	Beckel, C. L.	NCA 5-55	2825
11	UNIV OF NEW MEXICO	Maran, S. P.	GSFC	StJohn, R.	NCA 5-57	2826
11	UNIV OF NEW MEXICO	Jones, H. P.	GSFC	Regener, V. H.	NCA 5-66	2827
11	UNIV OF NEW MEXICO	Hobbs, R. W.	GSFC	StJohn, R.	NCA 5-73	2828
11	UNIV OF NOTRE DAME	Haggard, J. B.	LERC	Kanury, M.	NAS 3-21018	2121
11	UNIV OKLAHOMA-NORMAN	Kupperian, J. E., Jr.	GSFC	Herczeg, T. J.	NSG 5257	3188
11	UNIV OF PENNSYLVANIA	Boggess, A.	GSFC	Koch, R. H.	NSG 5296	3287
11	UNIV OF PENNSYLVANIA	Dailey, C. C.	MSFC	Shen, B. S.	NAS 8-33088	3284
11	UNIV OF PITTSBURGH	Billingham, J.	ARC	Gatewood, G. D.	NSG 2116	3297
11	UNIV OF PITTSBURGH	Black, D. C.	ARC	Gatewood, G. D.	NSG 2117	3298
11	UNIV OF PITTSBURGH	Boyce, J. M.	HQ-SL	Hapke, B. W.	NSG 7147	3305
11	UNIV OF ROCHESTER	Kupperian, J. E., Jr.	GSFC	Savedoff, M. P.	NSG 5054	3024
11	UNIV OF SO FLORIDA	Tolson, R. H.	LARC	Smith, H. C.	NSG 1420	1918
11	UNIV OF SO FLORIDA	Hall, J. B., Jr.	LARC	Wilkins, R. D.	NSG 7242	1921
11	UNIV OF SOUTHERN CAL	Hall, C. F.	ARC	Judge, D. L.	NAS 2-6558	1631
11	UNIV OF SOUTHERN CAL	Hall, C. F.	ARC	Intriligator, D. S.	NAS 2-7969	1632
11	UNIV OF SOUTHERN CAL	Hall, C. F.	ARC	Intriligator, D. S.	NAS 2-9478	1633
11	UNIV TENNESSEE-KNOXV	Harris, J. W.	JSC	Taylor, L. A.	NGL 43-001-140	3359
11	UNIV TENNESSEE-KNOXV	Bohlin, J. D.	HQ-ST	Sellin, I. A.	NSG 7049	3367
11	UNIV TEXAS-AUSTIN	Kupperian, J. E., Jr.	GSFC	Lambert, D. L.	NSG 5005	3532
11	UNIV TEXAS-AUSTIN	Kupperian, J. E., Jr.	GSFC	Smith, M. A.	NSG 5167	3534
11	UNIV TEXAS-AUSTIN	Boggess, A.	GSFC	VanDenBout, P. A.	NSG 5233	3535
11	UNIV TEXAS-AUSTIN	Kupperian, J. E., Jr.	GSFC	Trafton, L. M.	NSG 5236	3536
11	UNIV TEXAS-AUSTIN	Potter, A. E.	JSC	Barnes, T.	NAS 9-15093	3507
11	UNIV TEXAS-AUSTIN	Snoddy, W. C.	MSFC	Henize, K. G.	NAS 8-31459	3500
11	UNIV TEXAS-AUSTIN	O'Dell, C. R.	MSFC	Lambert, D. L.	NAS 8-32905	3501
11	UNIV TEXAS-AUSTIN	O'Dell, C. R.	MSFC	Jefferys, W. H.	NAS 8-32906	3502
11	UNIV TEXAS-AUSTIN	Rosendhal, J. D.	HQ-SC	VanDenBout, P. A.	NGR 44-012-209	3517
11	UNIV TEXAS-AUSTIN	Roman, N. G.	HQ-SC	Shield, G. A.	NSG 7232	3539
11	UNIV TEXAS-AUSTIN	Rosendhal, J. D.	HQ-SC	Bengtson, R. D.	NSG 7347	3542
11	UNIV TEXAS-AUSTIN	Roman, N. G.	HQ-SC	Henize, K. G.	NSG 7371	3544
11	UNIV TEXAS-AUSTIN	Boggess, N. W.	HQ-SC	Evans, N. J., II	NSG 7381	3545

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11	UNIV TEXAS-AUSTIN	Brunk, W. E.	HQ-SL	Wilson, W. J.	NGL 44-012-006	3513
11	UNIV TEXAS-AUSTIN	Brunk, W. E.	HQ-SL	Douglas, J. N.	NGL 44-012-055	3514
11	UNIV TEXAS-AUSTIN	Brunk, W. E.	HQ-SL	Trafton, L. M.	NGR 44-012-152	3515
11	UNIV TEXAS-AUSTIN	Brunk, W. E.	HQ-SL	Mulholland, J. D.	NGR 44-012-282	3520
11	UNIV TEXAS-AUSTIN	Brunk, W. E.	HQ-SL	Jefferys, W. H.	NSG 7408	3546
11	UNIV TEXAS-AUSTIN	Timothy, A. F.	HQ-ST	Bengtson, P. D.	NGR 44-012-258	3519
11	UNIV TEXAS-DALLAS	Caporale, A. J.	GSFC	Hanson, W. B.	NAS 5-25310	3554
11	UNIV OF TOLEDO	Kupperian, J. E., Jr.	GSFC	Molnar, M. R.	NSG 5183	3162
11	UNIV OF TOLEDO	Kupperian, J. E., Jr.	GSFC	Bopp, B. W.	NSG 5207	3163
11	UNIV OF TOLEDO	Rosendhal, J. D.	HQ-SC	Witt, A. N.	NSG 7041	3164
11	UNIV OF TOLEDO	Roman, N. G.	HQ-SC	Molnar, M. R.	NSG 7138	3165
11	UNIV OF TOLEDO	Rosendhal, J. D.	HQ-SC	Witt, A. N.	NSG 7431	3168
11	UNIV OF TOLEDO	Roman, N. G.	HQ-SC	Molnar, M. R.	NSG 7475	3169
11	UNIV OF TOLEDO	Donn, B. D.	HQ-SL	Delsemme, A. H.	NSG 7301	3166
11	UNIV OF VIRGINIA	Wilson, L.	GSFC	O'Connell, R. W.	NAS 5-22346	3686
11	UNIV OF VIRGINIA	Humes, D. H.	LARC	Singer, S. F.	NSG 1427	3698
11	UNIV OF VIRGINIA	Roman, N. G.	HQ-SC	Frederick, L. W.	NGL 47-005-066	3689
11	UNIV OF VIRGINIA	Brunk, W. E.	HQ-SL	Ianna, P. A.	NSG 7364	3704
11	UNIV OF WASHINGTON	Brandt, J.	GSFC	Bohm-Vitense, E.	NAS 5-22379	3758
11	UNIV OF WASHINGTON	Boggess, A.	GSFC	Bohm-Vitense, E.	NSG 5240	3778
11	UNIV OF WASHINGTON	Opp, A. G.	HQ-SC	Lord, J. J.	NSG 7318	3784
11	UNIV OF WASHINGTON	French, B. M.	HQ-SL	Hodge, P. W.	NGR 48-002-033	3769
11	UNIV OF WASHINGTON	Brunk, W. E.	HQ-SL	Greene, T. F.	NGR 48-002-142	3771
11	UNIV WISC-MADISON	Wilson, L.	GSFC	Anderson, C. M.	NAS 5-22349	3801
11	UNIV WISC-MADISON	Sobieski, S.	GSFC	Bless, R. C.	NAS 5-23285	3803
11	UNIV WISC-MADISON	White, R. A.	GSFC	Bless, R. C.	NAS 5-24487	3809
11	UNIV WISC-MADISON	Bissell, E. E.	GSFC	Code, A. D.	NGL 50-002-013	3813
11	UNIV WISC-MADISON	Bissell, E. E.	GSFC	Kraushaar, W. L.	NGL 50-002-044	3814
11	UNIV WISC-MADISON	Kupperian, J. E., Jr.	GSFC	Savage, B. D.	NSG 5100	3823
11	UNIV WISC-MADISON	Kupperian, J. E., Jr.	GSFC	Cassinelli, J. P.	NSG 5180	3826
11	UNIV WISC-MADISON	Kupperian, J. E., Jr.	GSFC	Savage, B. D.	NSG 5181	3827
11	UNIV WISC-MADISON	Boggess, A.	GSFC	Savage, B. D.	NSG 5241	3829
11	UNIV WISC-MADISON	Boggess, A.	GSFC	Doherty, L. R.	NSG 5242	3830
11	UNIV WISC-MADISON	Roman, N. G.	HQ-SC	Code, A. D.	NSG 7050	3833
11	UNIV WISC-MADISON	Rosendhal, J. D.	HQ-SC	Savage, B. D.	NSG 7133	3834
11	VANDERBILT UNIVERSTY	Roman, N. G.	HQ-SC	Weedman, D. W.	NSG 7343	3378
11	VANDERBILT UNIVERSTY	Roman, N. G.	HQ-SC	Hall, D.	NSG 7463	3379
11	VASSAR COLLEGE	Rosendhal, J. D.	HQ-SC	Hutchinson, J. L.	NSG 7359	3026
11	VIRGINIA POLY INST	Kupperian, J. E., Jr.	GSFC	Dennison, B. K.	NSG 5221	3753
11	VIRGINIA POLY INST	Brunk, W. E.	HQ-SL	McGee, H. A.	NGL 47-004-080	3717
11	WASHINGTON UNIVERSTY	Kupperian, J. E., Jr.	GSFC	Smith, W. H.	NSG 5187	2724
11	WASHINGTON UNIVERSTY	Talley, D.	MSFC	Israel, M. H.	NAS 8-27976	2718
11	WASHINGTON UNIVERSTY	Fishman, G. J.	HQ-SC	Israel, M. H.	NGR 26-008-001	2721
11	WASHINGTON UNIVERSTY	Roman, N. G.	HQ-SC	Smith, W. H.	NSG 7372	2728
11	WASHINGTON UNIVERSTY	Brunk, W. E.	HQ-SL	Smith, W. H.	NSG 7334	2727
11	WESTRN KENTUCKY UNIV	Boggess, A.	GSFC	Hackney, R. L.	NSG 5238	2222
11	YESHIVA UNIVERSITY	Hansen, J. E.	GSFC	Finkelstein, D.	NGL 33-023-018	3027
12	ADELPHI UNIVERSITY	Buell, D. A.	ARC	Steinmetz, W. J.	NSG 2088	2835
12	ARIZONA STATE UNIV	Pollock, G. E.	ARC	Yuen, G. U.	NCA 2-35702	1081
12	ATHENS STATE COLLEGE	Zwiener, J. M.	MSFC	Workman, G. L.	NAS 8-31731	1013
12	ATLANTA UNIVERSITY	Kent, M. I.	MSFC	Reed, J. L.	NSG 8019	1923
12	BOWIE STATE COLLEGE	Gross, F. C.	GSFC	Rock, M.	NSG 5009	2247
12	CALIF INST OF TECH	Harris, J. W.	JSC	Wasserburg, G. J.	NGL 05-002-188	1178
12	CAL STATE U-L ANGLES	Young, R. S.	HQ-SB	Bragin, J.	NSG 7261	1225
12	CASE WESTERN RESERVE	Quattrone, P. D.	ARC	Yeager, E.	NGR 36-027-050	3068
12	CASE WESTERN RESERVE	Kohl, F. J.	LERC	Mateescu, G. D.	NSG 3009	3072
12	CASE WESTERN RESERVE	Serafini, T. T.	LERC	Koenig, J. L.	NSG 3140	3082
12	CASE WESTERN RESERVE	Lauver, R. W.	LERC	Ritchey, W. M.	NSG 3142	3083

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12	CASE WESTERN RESERVE	Schafer, C. F.	MSFC	Ostrach, S.	NAS 8-31907	3065
12	COLLEGE OF WM & MARY	Young, P. R.	LARC	Kranbuehl, D. E.	NSG 1095	3611
12	COLORADO SCH OF MINE	Reynolds, T. W.	LERC	Daniel, S. R.	NSG 3122	1648
12	COPPIN STATE COLLEGE	Ford, F.	GSFC	McDermott, P. P.	NSG 5051	2248
12	CORNELL UNIVERSITY	Young, R. S.	HQ-SB	Sagan, C. E.	NGR 33-010-101	2900
12	FISK UNIVERSITY	Kent, M. I.	MSFC	Mickens, R. E.	NSG 8035	3334
12	FLORIDA INST OF TECH	Howard, F.	KSC	Bowman, T. A.	NAS10-9166	1860
12	HARVARD UNIVERSITY	Harris, J. W.	JSC	Hays, J. F.	NGL 22-007-247	2382
12	HOWARD UNIVERSITY	Stief, L. J.	GSFC	Jackson, W. M.	NSG 5071	1832
12	HOWARD UNIVERSITY	Donn, B. D.	HQ-SL	Jackson, W. M.	NSG 7378	1840
12	INDIANA U-BLOOMINGTN	Chang, S.	ARC	Hayes, J. M.	NCA 2-335702	2091
12	KENT STATE UNIV-KENT	Quattrone, P. D.	ARC	Madey, R.	NSG 2013	3101
12	LEHIGH UNIVERSITY	Boese, R. W.	ARC	Lovejoy, R. W.	NCA 2-380801	3229
12	LEHIGH UNIVERSITY	Harris, J. W.	JSC	Goldstein, J. I.	NGR 39-007-056	3233
12	MASS INST OF TECH	Quattrone, P. D.	ARC	Reid, R. C.	NGR 22-009-723	2464
12	MASS INST OF TECH	Quattrone, P. D.	ARC	Steinfeld, J. I.	NGR 22-009-766	2469
12	MASS INST OF TECH	Harris, J. W.	JSC	Burns, R. G.	NGR 22-009-551	2458
12	MASS INST OF TECH	Byvik, C. E.	LARC	Wrighton, M. S.	NSG 1048	2476
12	MASS INST OF TECH	Young, R. S.	HQ-SB	Rich, A.	NGR 22-009-277	2453
12	MISS UNIV FOR WOMEN	Young, P. R.	LARC	Pratt, J. R.	NSG 1539	2691
12	MOREHOUSE COLLEGE	Stephens, J. B.	MSFC	Gales, J. N.	NGL 11-008-001	1967
12	MOREHOUSE COLLEGE	Clemons, J. M.	MSFC	Frazier, D. O.	NSG 8030	1971
12	MOREHOUSE COLLEGE	Clemons, J. M.	MSFC	Hall, J. H., Jr.	NSG 8049	1974
12	MORRIS BROWN COLLEGE	Patterson, W. J.	MSFC	Maxwell, A.	NSG 8027	1975
12	OLD DOMINION UNIV	Phillips, D. H.	LARC	Goglia, G. L.	NSG 1393	3657
12	PENN STATE U-UNIV PK	Fewell, L. L.	ARC	Allcock, H. R.	NSG 2241	3264
12	POLY INST OF NY	Fohlen, G. M.	ARC	Wrong, I. M.	NSG 2147	2951
12	POLY INST OF NY	Riccitiello, S. R.	ARC	Pearce, E. M.	NSG 2182	2952
12	POLY INST OF NY	Young, R. S.	HQ-SB	Eirich, F. R.	NGR 33-006-070	2946
12	POMONA COLLEGE	Williams, T. S., Jr.	LARC	Baird, A. K.	NAS 1-11854	1235
12	RENSSELAER POLY-NY	Lacy, L. L.	MSFC	Glicksman, M. E.	NAS 8-32690	2961
12	RENSSELAER POLY-NY	Young, R. S.	HQ-SB	Ferris, J. P.	NGR 33-018-148	2969
12	SAN FRAN STATE UNIV	Lawless, J. G.	ARC	Orenberg, J. B.	NCA 2-660802	1241
12	SAN FRAN STATE UNIV	Lawless, J. G.	ARC	Buttlaire, D. H.	NCA 2-660804	1243
12	SAN FRAN STATE UNIV	Lawless, J. G.	ARC	Orenberg, J. B.	NCA 2-660805	1244
12	SAN JOSE STATE UNIV	Flores, J. J.	ARC	Koenig, I.	NCA 2-675803	1249
12	SAN JOSE STATE UNIV	Altman, R. L.	ARC	Ling, A. C.	NCA 2-675806	1251
12	SAN JOSE STATE UNIV	Altman, R. L.	ARC	Mayer, L. A.	NCA 2-675807	1252
12	SAN JOSE STATE UNIV	Oyama, V. I.	ARC	Ling, A. C.	NCA 2-675810	1255
12	SAN JOSE STATE UNIV	Wydeven, T. J.	ARC	Spitze, L. A.	NGR 05-046-011	1256
12	SAN JOSE STATE UNIV	Wydeven, T. J.	ARC	Spitze, L. A.	NSG 2066	1258
12	SAN JOSE STATE UNIV	Rosser, R. W.	ARC	Neptune, J. A.	NSG 2186	1261
12	SAN JOSE STATE UNIV	Fohlen, G. M.	ARC	Ling, A. C.	NSG 2209	1262
12	SAN JOSE STATE UNIV	Fish, R. H.	ARC	Myronuk, D. J.	NSG 2219	1264
12	SAN JOSE STATE UNIV	Wydeven, T. J.	ARC	Acrivos, J.	NSG 2247	1269
12	SAN JOSE STATE UNIV	Rosser, R. W.	ARC	Ling, A. C.	NSG 2273	1271
12	SAN JOSE STATE UNIV	Heimbuch, A. H.	ARC	Ling, A. C.	NSG 2274	1272
12	SAN JOSE STATE UNIV	Heimbuch, A. H.	ARC	Ling, A. C.	NSG 2302	1274
12	STANFORD UNIVERSITY	Chang, S.	ARC	Loew, G. H.	NGR 05-020-405	1329
12	STATE UNIV NY-BUFFAL	Nerren, B. H.	MSFC	Grusha, E.	NAS 8-31953	2990
12	STATE U NY-STONY BRK	Harris, J. W.	JSC	Schaeffer, O. A.	NGL 33-015-174	2997
12	STATE U NY-STONY BRK	Young, R. S.	HQ-SB	Owen, T.	NGR 33-015-169	3001
12	TEXAS A&M UNIVERSITY	Young, R. S.	HQ-SB	Fendler, J. H.	NSG 7037	3459
12	UNIV OF ALBUQUERQUE	Fordyce, J. S.	LERC	Urzendowski, R. M.	NSG 3092	2822
12	UNIV ALA-BIRMINGHAM	Young, R. S.	HQ-SB	Lacey, J. C., Jr.	NGR 01-010-001	1042
12	UNIV ALA-UNIVERSITY	Linton, R. C.	MSFC	Desmedt, D.	NAS 8-32481	1066
12	UNIV OF ARIZONA	Harris, J. W.	JSC	Drake, M. J.	NGR 03-002-388	1123
12	UNIV CALIF-BERKELEY	Harris, J. W.	JSC	Price, P. B.	NGL 05-003-410	1416

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12	UNIV CALIF-BERKELEY	Young, R. S.	HQ-SB	Jukes, J. H.	NGR 05-003-460	1423
12	UNIV CALIF-L ANGELES	Harris, J. W.	JSC	Wasson, J. T.	NGL 05-007-367	1481
12	UNIV CALIF-SAN DIEGO	Harris, J. W.	JSC	Arnold, J. R.	NGL 05-009-148	1546
12	UNIV CALIF-SAN DIEGO	Harris, J. W.	JSC	Marti, K.	NGL 05-009-150	1547
12	UNIV CALIF-SAN DIEGO	Young, R. S.	HQ-SB	Miller, S. L.	NGR 05-009-218	1555
12	UNIV OF CHICAGO	Harris, J. W.	JSC	Cox, E. L.	NGL 14-001-169	2039
12	UNIV COLORADO-BOLDR	Whitten, R. C.	ARC	Castleman, A. W.	NSG 2248	1705
12	UNIV OF FLORIDA	Alston, W. B.	LERC	Butler, G. B.	NSG 3120	1897
12	UNIV OF FLORIDA	Schell, J. T.	MSFC	Patterson, E. P.	NAS 8-20247	1877
12	UNIV OF HAWAII-MANOA	Young, R. S.	HQ-SB	Folsome, C. E.	NGR 12-001-109	1991
12	UNIV HOUSTON-HOUSTON	Young, R. S.	HQ-SB	Becker, R. S.	NGR 44-005-091	3478
12	UNIV ILLINOIS-URBANA	Young, R. S.	HQ-SB	Woese, C. R.	NSG 7044	2084
12	UNIV MARYLAND-COL PK	Donn, B. D.	GSFC	Khanna, R. J.	NSG 5172	2332
12	UNIV MARYLAND-COL PK	Young, R. S.	HQ-SB	Ponnamperuma, C. A.	NGR 21-002-317	2311
12	UNIV OF MASS-AMHERST	Young, R. S.	HQ-SB	Huguenin, R. L.	NSG 7397	2554
12	UNIV OF MIAMI	Young, R. S.	HQ-SB	Fox, S. W.	NGR 10-007-008	1910
12	UNIV MICH-ANN ARBOR	Tilford, S. G.	HQ-ST	Cicerone, R. J.	NSG 7187	2628
12	UNIV MO-ROLLA	Graves, R. A., Jr.	LARC	Biolsi, L.	NSG 1369	2711
12	UNIV OF NEW MEXICO	Harris, J. W.	JSC	Keil, K.	NGL 32-004-063	2830
12	UNIV OF NEW MEXICO	Williams, T. S., Jr.	LARC	Keil, K.	NAS 1-11855	2823
12	UNIV OF NOTRE DAME	Cochran, T. H.	LERC	Kanury, A. M.	NAS 3-20087	2120
12	UNIV OF PITTSBURGH	Fordyce, J. S.	LERC	Liu, C. C.	NSG 3002	3299
12	UNIV OF PITTSBURGH	Simon, N. K.	HQ-ST	Kaufman, F.	NGR 39-011-161	3296
12	UNIV SAN FRANCISCO	Kourtides, D. A.	ARC	Hilado, C. J.	NSG 2039	1607
12	UNIV SAN FRANCISCO	Lawless, J. G.	ARC	Furst, A.	NSG 2276	1609
12	UNIV OF SANTA CLARA	Chang, S.	ARC	White, D. H.	NCA 2-685806	1618
12	UNIV STHN COLORADO	Bryan, C. J.	KSC	Mahan, K. I.	NSG 806	1749
12	UNIV TEXAS-AUSTIN	Bond, V.	JSC	Szebekely, V. G.	NAS 9-15567	3511
12	UNIV TEXAS-EL PASO	Duke, M.	JSC	Hoffer, J. M.	NSG 9062	3571
12	UNIV OF UTAH	Patterson, W. J.	MSFC	Andrade, J. D.	NAS 8-30253	3586
12	UTAH STATE UNIV	Tilford, S. G.	HQ-ST	Moore, W. M.	NSG 7206	3600
12	VIRGINIA COMNWLTH U	Bell, V. L.	LARC	Stump, B. L.	NGR 47-002-041	3705
12	VIRGINIA POLY INST	Johnston, N. J.	LARC	Wolfe, J. F.	NSG 1064	3722
12	VIRGINIA POLY INST	Young, P. R.	LARC	Mason, J. G.	NSG 1085	3723
12	VIRGINIA POLY INST	Progar, D. J.	LARC	Wightman, J. P.	NSG 1124	3724
12	VIRGINIA POLY INST	StClair, T. L.	LARC	Ogliaruso, M. A.	NSG 1286	3732
12	VIRGINIA POLY INST	Pellett, G. L.	LARC	Wightman, J. P.	NSG 1389	3738
12	VIRGINIA POLY INST	Slemp, W. S.	LARC	Taylor, L. T.	NSG 1428	3739
12	VIRGINIA POLY INST	StClair, A. K.	LARC	McGrath, J. E.	NSG 1512	3741
12	VIRGINIA POLY INST	StClair, T. L.	LARC	Wolfe, J. F.	NSG 1524	3743
12	WILBERFORCE UNIV	Hsu, L. C.	LERC	Stickney, P. B.	NSG 3067	3170
12	WORCESTER POLY INST	Young, R. S.	HQ-SB	Plumb, R. C.	NSG 7392	2560
12	YALE UNIVERSITY	Fryburg, G. C.	LERC	Rosner, D. E.	NSG 3169	1763
13	ALABAMA A&M UNIV	Schafer, C. F.	MSFC	Lal, R. B.	NSG 8033	1003
13	ALABAMA A&M UNIV	Bilbro, J. W.	MSFC	Murty, S. S.	NSG 8037	1004
13	ARIZONA STATE UNIV	Morris, J. F.	LERC	Jacobson, D. L.	NSG 7019	1087
13	ATHENS STATE COLLEGE	Fountain, J. A.	MSFC	McNutt, R. C.	NAS 8-28058	1011
13	ATHENS STATE COLLEGE	Moore, W. W., Jr.	MSFC	Martin, A. M., III	NAS 8-30880	1012
13	ATHENS STATE COLLEGE	Finnell, S. E.	MSFC	Workman, G. L.	NAS 8-32221	1014
13	BOSTON COLLEGE	Cauffman, D. P.	HQ-ST	Eather, R. H.	NSG 7190	2358
13	BOWIE STATE COLLEGE	Caruso, A. J.	GSFC	Bhatia, M. S.	NGR 21-027-010	2245
13	BRIGHAM YOUNG UNIV	Hall, C. F.	ARC	Jones, D. E.	NAS 2-7358	3580
13	BROOKLYN COLLEGE	Meador, W. E.	LARC	Franco, V.	NSG 1378	2836
13	CALIF INST OF TECH	Davis, M. A.	GSFC	Stone, E. C.	NAS 5-11066	1163
13	CALIF INST OF TECH	Gallagher, W. F.	GSFC	Stone, E. C.	NAS 5-20721	1164
13	CALIF INST OF TECH	Stouffer, C. G.	GSFC	Garmire, G. P.	NAS 5-24339	1168
13	CALIF INST OF TECH	Wende, C. D.	GSFC	Garmire, G. P.	NAS 5-25049	1169
13	CALIF INST OF TECH	Harris, J. W.	JSC	Epstein, S.	NGL 05-002-190	1179

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13	CALIF INST OF TECH	Harris, J. W.	JSC	Albee, A. L.	NGL 05-002-338	1181
13	CALIF INST OF TECH	Harris, J. W.	JSC	Tombrello, T. A.	NGR 05-002-333	1190
13	CALIF INST OF TECH	Schwenk, F. C.	HQ-RR	Vaughan, R.	NSG 7275	1207
13	CALIF INST OF TECH	Henry, W.	HQ-RR	Ahrens, T. J.	NSG 7458	1213
13	CALIF INST OF TECH	Timothy, A. F.	HQ-ST	Zirin, H.	NGR 05-002-345	1191
13	CALIF INST OF TECH	Bohlin, J. D.	HQ-ST	Goldreich, P.	NSG 7342	1209
13	CAL STATE U-FULLERTN	Boese, R. W.	ARC	Nanes, R.	NCA 2-253701	1218
13	CAL STATE U-NRTHRDGE	Bohlin, J.	HQ-ST	Chapman, G. T.	NSG 7456	1230
13	CARNEGIE-MELLON UNIV	Walker, G. H.	LARC	Milnes, A. G.	NGR 39-087-021	3211
13	CASE WESTERN RESERVE	Purvis, C. K.	LERC	Gordan, W. L.	NSG 3197	3085
13	CASE WESTERN RESERVE	Labus, T. L.	LERC	Ostrach, S.	NSG 3221	3090
13	CASE WESTERN RESERVE	Williams, J. R.	MSFC	Ostrach, S.	NAS 8-33015	3066
13	CATHOLIC UNIVERSITY	Dennis, B. R.	GSFC	Werntz, C.	NSG 5066	1780
13	CATHOLIC UNIVERSITY	McAvoy, N.	GSFC	Lally, J.	NSG 5111	1781
13	CATHOLIC UNIVERSITY	Taylor, W. W.	HQ-ST	Whang, Y. C.	NGR 09-005-063	1778
13	CATHOLIC UNIVERSITY	Bohlin, J. D.	HQ-ST	Whang, Y. C.	NSG 7422	1783
13	CHRISTPHR NEWPRT COL	Byvik, C. E.	LARC	Buoncristiani, A. M.	NSG 1514	3608
13	CLARK COLLEGE	Pohly, J. G.	HQ-LU	Sinha, O. P.	NSG 7267	1925
13	CLARKSON COL OF TECH	Barnes, C. M.	JSC	McNulty, P. J.	NSG 9059	2850
13	CLARKSON COL OF TECH	Williams, J. R.	MSFC	Subramanian, R. S.	NAS 8-32944	2847
13	CLEVELAND STATE UNIV	Brown, G. V.	LERC	Chu, C. W.	NSG 3144	3097
13	COLLEGE OF WM & MARY	Crouch, R. K.	LARC	Sher, A.	NSG 1385	3613
13	COLORADO STATE UNIV	Billman, K. W.	ARC	She, C. Y.	NSG 2287	1667
13	COLORADO STATE UNIV	Brown, G. V.	LERC	Etters, R. D.	NGR 06-002-159	1663
13	COLORADO STATE UNIV	Chubb, D. L.	LERC	Collins, G. J.	NSG 3060	1670
13	COLORADO STATE UNIV	Mirtich, M. J.	LERC	Kaufman, H. R.	NSG 3086	1671
13	COLORADO STATE UNIV	Stevens, N. J.	LERC	Yadlowsky, E. J.	NSG 3145	1673
13	COLORADO STATE UNIV	Sater, B. L.	LERC	Sites, J. R.	NSG 3167	1674
13	COLORADO STATE UNIV	Grier, N. T.	LERC	Kaufman, H. R.	NSG 3196	1675
13	COLUMBIA UNIVERSITY	Bissell, E. E.	GSFC	Novick, R.	NSG 5146	2876
13	COLUMBIA UNIVERSITY	Harris, J. W.	JSC	Horai, K.	NGR 33-008-177	2864
13	CORNELL UNIVERSITY	Gustafson, C.	GSFC	Walker, J. C.	NAS 5-20705	2891
13	CORNELL UNIVERSITY	Conrath, B. J.	GSFC	Gierasch, P. J.	NAS 5-23236	2892
13	CORNELL UNIVERSITY	Flood, D. J.	LERC	Ashcroft, N. W.	NGR 33-010-188	2906
13	CORNELL UNIVERSITY	Cauffman, D. P.	HQ-ST	Farley, D. T.	NGR 33-010-161	2903
13	DARTMOUTH COLLEGE	Taylor, W. W.	HQ-ST	Morgan, M. G.	NGR 30-001-041	2749
13	DELAWARE STATE COL	Pohly, J. G.	HQ-LU	Helmy, E. M.	NGR 08-002-001	1765
13	DREXEL UNIVERSITY	Nelsen, E. D.	GSFC	House, F. B.	NAS 5-22946	3216
13	DREXEL UNIVERSITY	Holland, A. C.	WFC	Acquista, C. R.	NSG 6019	3223
13	FISK UNIVERSITY	Stecker, F. W.	GSFC	Mickens, R. E.	NSG 5297	3333
13	FISK UNIVERSITY	Kroes, R. L.	MSFC	Silberman, E.	NGR 43-021-002	3332
13	FISK UNIVERSITY	Kroes, R. L.	MSFC	Silberman, E.	NSG 8060	3335
13	FLORIDA A&M UNIV	Pohly, J. G.	HQ-LU	Jones, H. J.	NSG 901	1853
13	FLORIDA STATE UNIV	Hardin, J. C.	LARC	Tam, C. K.	NSG 1329	1866
13	FORT LEWIS COLLEGE	Browne, I. D.	JSC	Baker, J. R.	NAS 9-15276	1681
13	GEORGE WASHINGTON U	Greene, G. C.	LARC	Liebowitz, H.	NSG 1474	1808
13	GEORGIA INST OF TECH	Huff, R. G.	LERC	Strahle, W. C.	NSG 3015	1957
13	GEORGIA INST OF TECH	Feiler, C. E.	LERC	Cassonova, R. A.	NSG 3228	1961
13	GEORGIA INST OF TECH	Kerr, J. H.	MSFC	Callen, W. R.	NAS 8-31193	1941
13	HARVARD UNIVERSITY	McAvoy, N.	GSFC	Bloembergen, N.	NGL 22-007-117	2380
13	HARVARD UNIVERSITY	Reed, E. I.	GSFC	Parkinson, W. H.	NSG 5176	2393
13	HARVARD UNIVERSITY	Snoddy, W. C.	MSFC	Vaiana, G. S.	NAS 8-31374	2373
13	HARVARD UNIVERSITY	Bordelon, C. S.	MSFC	Noyes, R. W.	NAS 8-31549	2374
13	HARVARD UNIVERSITY	Lacy, L. L.	MSFC	Turnbull, D.	NAS 8-32691	2375
13	HARVARD UNIVERSITY	Bohlin, J. D.	HQ-ST	Parkinson, W. H.	NGL 22-007-006	2378
13	HARVARD UNIVERSITY	Bohlin, J. D.	HQ-ST	Reeves, E. M.	NSG 5128	2390
13	HARVARD UNIVERSITY	Bohlin, J. D.	HQ-ST	Maxwell, A.	NSG 7391	2404
13	HOWARD UNIVERSITY	Yin, L. I.	GSFC	Tsang, T.	NGR 09-011-057	1827

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13	HOWARD UNIVERSITY	Lyons, J. C.	GSFC	Deloatch, E. M.	NSG 5158	1836
13	HOWARD UNIVERSITY	O'Keefe, J. A.	GSFC	Thorpe, A. N.	NSG 5186	1837
13	IOWA STATE UNIV	Pollack, J. B.	ARC	Grossman, A. S.	NCA 2-340801	2132
13	JOHNS HOPKINS UNIV	Kaiser, M. L.	HQ-ST	Krimigis, S. M.	NSG 7055	2270
13	LEHIGH UNIVERSITY	Harris, J. W.	JSC	Sclar, C. B.	NGR 39-007-064	3235
13	LEHIGH UNIVERSITY	Williams, J. R.	MSFC	VanDerHoff, J. W.	NAS 8-32951	3227
13	MASS INST OF TECH	Davis, M. A.	GSFC	Bridge, H. S.	NAS 5-11062	2418
13	MASS INST OF TECH	McAvoy, N.	GSFC	Javan, A.	NGR 22-009-741	2468
13	MASS INST OF TECH	Harris, J. W.	JSC	Simmons, M. G.	NGR 22-009-540	2457
13	MASS INST OF TECH	Akey, N. D.	LARC	Fonstad, C. G.	NSG 1413	2484
13	MASS INST OF TECH	Singh, J. J.	LARC	Greytak, T. J.	NSG 1551	2489
13	MASS INST OF TECH	Weinberg, I.	LERC	Gatos, H. C.	NSG 3017	2503
13	MASS INST OF TECH	Reinmann, J. J.	LERC	Lax, B.	NSG 3088	2510
13	MASS INST OF TECH	Davidson, M. C.	MSFC	Hitt, A. F.	NAS 8-32994	2436
13	MASS INST OF TECH	Roberts, J. L.	HQ-MT	Chapman, P. K.	NGR 22-009-735	2467
13	MASS INST OF TECH	Opp, A. G.	HQ-SC	Clark, G. W.	NGL 22-009-015	2444
13	MIAMI UNIVERSITY	Hohl, F.	LARC	Wells, W. E.	NSG 1383	3104
13	MIAMI UNIVERSITY	Hohl, F.	LARC	Wells, W. E.	NSG 1396	3105
13	MICHIGAN STATE UNIV	Bohlin, J. D.	HQ-ST	Stein, R. F.	NSG 7293	2563
13	MISSISSIPPI STATE U	Hollis, B. R., Jr.	MSFC	Trotter, D.	NAS 8-26749	2677
13	MONTANA STATE UNIV	Eby, P. B.	MSFC	Nortdvedt, K.	NSG 8061	2732
13	MOREHOUSE COLLEGE	Stone, N. H.	MSFC	Turner, J. M.	NSG 8020	1970
13	MOREHOUSE COLLEGE	Vaughn, W. W.	MSFC	Spight, C.	NSG 8039	1972
13	MOREHOUSE COLLEGE	Burch, J. L.	MSFC	Turner, J. M.	NSG 8043	1973
13	NEW MEX ST U-LAS CR	Salzman, J. A.	LERC	Armstrong, R. L.	NSG 3069	2820
13	NEW YORK UNIVERSITY	Schneck, P. B.	GSFC	Schwartz, J. T.	NSG 5032	2936
13	NEW YORK UNIVERSITY	Rosendhal, J. D.	HQ-SC	Glassgold, A. E.	NGR 33-016-196	2931
13	NO CAR A&T STATE U	Allario, F.	LARC	Yu, C.	NSG 1346	3038
13	N CAR CENTRAL UNIV	McAvoy, N.	GSFC	Dutta, J. M.	NSG 5120	3042
13	NO CAROLINA STATE U	Meador, W. E.	LARC	Hassan, H. A.	NSG 1058	3047
13	NO CAROLINA STATE U	Mayes, W. H.	LARC	Hart, F. D.	NSG 1205	3050
13	NO CAROLINA STATE U	Slemp, W. S.	LARC	Memory, J. D.	NSG 1562	3058
13	NORTHWESTERN UNIV	Behrendt, D. R.	LERC	Waber, J. T.	NGR 14-007-131	2016
13	OHIO STATE UNIV	Boese, R. W.	ARC	Rao, K. N.	NSG 2175	3120
13	OLD DOMINION UNIV	Fowler, W. B.	GSFC	Becher, J.	NSG 5289	3680
13	OLD DOMINION UNIV	Melfi, L. T., Jr.	LARC	Brock, F. J.	NSG 1271	3646
13	OLD DOMINION UNIV	Holmes, H. K.	LARC	Zuckerwar, A. J.	NSG 1324	3650
13	OLD DOMINION UNIV	Hohl, F.	LARC	Harries, W. L.	NSG 1362	3654
13	OLD DOMINION UNIV	Conway, E. J.	LARC	Heinbockel, J. H.	NSG 1465	3663
13	OREGON STATE UNIV	Harris, J. W.	JSC	Schmitt, R. A.	NGL 38-002-039	3196
13	PENN STATE U-UNIV PK	Spencer, N. W.	GSFC	Nisbet, J. S.	NSG 5212	3274
13	PENN STATE U-UNIV PK	Stevens, N. J.	LERC	Robinson, J. W.	NSG 3166	3270
13	PENN STATE U-UNIV PK	Ballance, C. W., Jr.	WFC	Kendall, B. R.	NGL 39-009-032	3255
13	PENN STATE U-UNIV PK	King, J. H.	HQ-ST	Nisbet, J. S.	NGL 39-009-003	3252
13	POLY INST OF NY	Will, H. A.	LERC	Lederman, S.	NSG 3108	2953
13	POLY INST OF NY	Taylor, W. W.	HQ-ST	Gross, S. H.	NGR 33-006-047	2944
13	PRINCETON UNIVERSITY	Williams, J. T.	GSFC	Lowrance, J. L.	NSG 5277	2791
13	PRINCETON UNIVERSITY	Honaker, W. C.	LARC	Miles, R. B.	NSG 1070	2781
13	PRINCETON UNIVERSITY	Boggess, N. W.	HQ-SC	Dicke, R. H.	NGR 31-001-202	2779
13	PURDUE UNIVERSITY	Harris, J. W.	JSC	Meyer, H. O.	NGR 15-005-157	2107
13	RENSSELAER POLY-NY	Wood, G. M.	LARC	White, F. A.	NSG 1360	2970
13	RENSSELAER POLY-NY	Jones, W. R., Jr.	LERC	Laver, J. A.	NSG 3170	2972
13	RENSSELAER POLY-NY	Lacy, L. L.	MSFC	Lacy, L. L.	NAS 8-33074	2963
13	RICE UNIVERSITY	Taylor, H. A., Jr.	GSFC	Cloutier, P. A.	NAS 5-23338	3402
13	RICE UNIVERSITY	Lad, R. A.	LERC	Rorschach, H. E.	NGL 44-006-001	3411
13	RICE UNIVERSITY	Cauffman, D. P.	HQ-ST	Michel, F. C.	NGL 44-006-012	3412
13	RICE UNIVERSITY	Taylor, W. W.	HQ-ST	Dessler, A. J.	NGR 44-006-137	3414
13	RUTGERS UNIV-NEWARK	Beach, H. L., Jr.	LARC	Johnson, J. A., III	NSG 1314	2801

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13	SAN FRAN STATE UNIV	Black, D. C.	ARC	Hagar, C.	NCA 2-660703	1238
13	SAN FRAN STATE UNIV	Barnes, A.	ARC	Kilpatrick, T.	NCA 2-660806	1245
13	SO CAROLINA ST COL	Urban, E. W.	MSFC	Payne, J. E.	NSG 8044	3320
13	STANFORD UNIVERSITY	Caroff, L. J.	ARC	Petrosian, V.	NCA 2-745715	1307
13	STANFORD UNIVERSITY	Whiting, E. E.	ARC	Boudart, M.	NCA 2-745717	1308
13	STANFORD UNIVERSITY	Whiting, E. E.	ARC	Heinemann, K.	NSG 2249	1361
13	STANFORD UNIVERSITY	Poppa, H. R.	ARC	Pound, G. M.	NSG 2285	1366
13	STANFORD UNIVERSITY	McKenzie, R. L.	ARC	Byer, R. L.	NSG 2289	1367
13	STANFORD UNIVERSITY	Billman, K. W.	ARC	Pantell, R. H.	NSG 2292	1368
13	STANFORD UNIVERSITY	Davis, M. A.	GSFC	Helliwell, R. A.	NAS 5-20871	1288
13	STANFORD UNIVERSITY	Fellerman, K. D.	GSFC	Helliwell, R. A.	NAS 5-24409	1292
13	STANFORD UNIVERSITY	Davis, M. A.	GSFC	Wilcox, J. M.	NAS 5-24420	1293
13	STANFORD UNIVERSITY	Bissell, E. E.	GSFC	Walker, A. B., Jr.	NSG 5131	1377
13	STANFORD UNIVERSITY	Bass, B. G.	MSFC	Walker, A. B., Jr.	NAS 8-31571	1296
13	STANFORD UNIVERSITY	Potter, R.	MSFC	Everitt, C. W.	NAS 8-32355	1298
13	STANFORD UNIVERSITY	Urban, E. W.	MSFC	Everitt, C. W.	NAS 8-32605	1299
13	STANFORD UNIVERSITY	Thom, K.	HQ-RR	Pantell, R. H.	NSG 7110	1382
13	STANFORD UNIVERSITY	Cauffman, D. P.	HQ-ST	Helliwell, R. A.	NGL 05-020-008	1319
13	STANFORD UNIVERSITY	King, J. H.	HQ-ST	Crawford, F. W.	NGL 05-020-176	1322
13	STANFORD UNIVERSITY	Bohlin, J. D.	HQ-ST	Sturrock, P. A.	NGL 05-020-272	1324
13	STANFORD UNIVERSITY	Taylor, W. W.	HQ-ST	DaRosa, A. V.	NGR 05-020-001	1327
13	STATE UNIV NY-BUFFAL	Morris, J. F.	LERC	Shaw, D. T.	NSG 7071	2992
13	STATE U NY-STONY BRK	Harris, J. W.	JSC	Bence, A. E.	NGL 33-015-130	2996
13	STATE U NY-STONY BRK	Harris, J. W.	JSC	Papike, J. J.	NSG 9044	3016
13	TALLADEGA COLLEGE	Whitten, R. C.	ARC	Morrison, R. A.	NSG 2217	1032
13	TALLADEGA COLLEGE	Dalins, I.	MSFC	Breecher, J.	NGR 01-007-009	1031
13	TEXAS A&M UNIVERSITY	Matthews, R. E.	JSC	Rouse, J. W., Jr.	NAS 9-15451	3444
13	TEXAS A&M UNIVERSITY	Brown, G. V.	LERC	Ford, A. L.	NSG 3201	3454
13	TEXAS A&M UNIVERSITY	Nowakowski, M. F.	MSFC	Parker, D. L.	NAS 8-32527	3436
13	UNION COLLEGE	McAvoy, N.	GSFC	Galantowicz, A.	NGR 33-032-004	3021
13	UNIV ALA-HUNTSVILLE	Parnell, T. A.	MSFC	Gregory, J. C.	NAS 8-24953	1044
13	UNIV ALA-HUNTSVILLE	Tandberghanssen, E.	MSFC	Wu, S. T.	NAS 8-28097	1045
13	UNIV ALA-HUNTSVILLE	Chappell, C. R.	MSFC	Comfort, R. H.	NAS 8-30563	1047
13	UNIV ALA-HUNTSVILLE	Parnell, T. A.	MSFC	Gregory, J. C.	NAS 8-31170	1048
13	UNIV ALA-HUNTSVILLE	Crider, B.	MSFC	Christiensen, D.	NAS 8-31293	1050
13	UNIV ALA-HUNTSVILLE	Vaughn, O. H., Jr.	MSFC	Hung, R. J.	NAS 8-31729	1053
13	UNIV ALA-HUNTSVILLE	Parnell, T. A.	MSFC	Gregory, J. C.	NAS 8-31895	1054
13	UNIV ALA-HUNTSVILLE	Whitaker, A. F.	MSFC	Castle, J. G.	NAS 8-32398	1056
13	UNIV ALA-HUNTSVILLE	Urban, E. W.	MSFC	Karr, G. R.	NAS 8-32818	1058
13	UNIV ALA-UNIVERSITY	Owen, R. B.	MSFC	Lin, H. K.	NAS 8-32386	1065
13	UNIV ALASKA-FAIRBNKS	Heppner, J. P.	GSFC	Brown, N. B.	NAS 5-25327	1070
13	UNIV ALASKA-FAIRBNKS	Spencer, N. W.	GSFC	Rees, M. H.	NSG 5219	1072
13	UNIV OF ARIZONA	McAvoy, N.	GSFC	Lamb, W. E., Jr.	NSG 5022	1128
13	UNIV OF ARIZONA	McAvoy, N.	GSFC	Lamb, W. E., Jr.	NSG 5302	1133
13	UNIV OF ARIZONA	Allen, R. E.	MSFC	Bier, M.	NAS 8-29566	1099
13	UNIV OF ARIZONA	Kaiser, M. L.	HQ-ST	Hsieh, K. C.	NGR 03-002-107	1116
13	UNIV OF ARIZONA	Taylor, W. W.	HQ-ST	Sonett, C. P.	NSG 7024	1136
13	UNIV OF ARIZONA	Bohlin, J. D.	HQ-ST	Levy, E. H.	NSG 7168	1143
13	UNIV CALIF-BERKELEY	Poppa, H. R.	ARC	Bier, M.	NCA 2-50705	1404
13	UNIV CALIF-BERKELEY	Billman, K. W.	ARC	Gustafson, T. K.	NSG 2151	1432
13	UNIV CALIF-BERKELEY	Davis, M. A.	GSFC	Anderson, K. A.	NAS 5-20079	1386
13	UNIV CALIF-BERKELEY	Davis, M. A.	GSFC	Mozer, F. S.	NAS 5-20080	1387
13	UNIV CALIF-BERKELEY	Gallagher, W. F.	GSFC	Heckman, H.	NAS 5-20995	1388
13	UNIV CALIF-BERKELEY	Campbell, C. E.	GSFC	Buffington, A.	NAS 5-24165	1391
13	UNIV CALIF-BERKELEY	Campbell, C. E.	GSFC	Price, P. B.	NAS 5-24166	1392
13	UNIV CALIF-BERKELEY	Harris, J. W.	JSC	Reynolds, J. H.	NGL 05-003-409	1415
13	UNIV CALIF-BERKELEY	Ondrak, B. T.	MSFC	Price, P. B.	NAS 8-29603	1397
13	UNIV CALIF-BERKELEY	Bissell, E. E.	HQ-ST	Mozer, F. S.	NGR 05-003-239	1418

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13	UNIV CALIF-IRVINE	Henry, W.	HQ-RR	Wallis, R. F.	NSG 7472	1466
13	UNIV CALIF-IRVINE	Bohlin, J. D.	HQ-ST	VanHoven, G.	NSG 7375	1465
13	UNIV CALIF-L ANGELES	Davis, M. A.	GSFC	Russell, C. T.	NAS 5-20064	1470
13	UNIV CALIF-L ANGELES	Hoffman, R. A.	GSFC	Coroniti, F. V.	NAS 5-25039	1472
13	UNIV CALIF-L ANGELES	Harris, J. W.	JSC	Kaplan, I. R.	NGR 05-007-289	1484
13	UNIV CALIF-L ANGELES	Keating, G. M.	LARC	Knuth, E. L.	NGR 05-007-416	1491
13	UNIV CALIF-L ANGELES	Taylor, W. W.	HQ-ST	Holzer, R. E.	NGR 05-007-276	1483
13	UNIV CALIF-L ANGELES	Timothy, A. F.	HQ-ST	Ulrich, R. K.	NSG 7158	1513
13	UNIV CALIF-L ANGELES	Bohlin, J. D.	HQ-ST	Ulrich, R. K.	NSG 7407	1523
13	UNIV CALIF-RIVERSIDE	Temkin, A.	GSFC	Poe, R. T.	NGL 05-008-005	1524
13	UNIV CALIF-SAN DIEGO	Woollam, J. A.	LERC	Luo, H. L.	NSG 3103	1563
13	UNIV CALIF-SAN DIEGO	Chappell, C. R.	MSFC	McIlwain, C. E.	NAS 8-31145	1537
13	UNIV CALIF-SAN DIEGO	Fishman, G. J.	HQ-SC	Peterson, L. E.	NGL 05-005-003	1539
13	UNIV CALIF-SAN DIEGO	King, J. H.	HQ-ST	McIlwain, C. E.	NGL 05-005-007	1541
13	UNIV CALIF-SAN DIEGO	Taylor, W. W.	HQ-ST	Banks, P. M.	NGR 05-009-075	1550
13	UNIV CALIF-SAN DIEGO	Bohlin, J. D.	HQ-ST	Hudson, H. S.	NSG 7100	1567
13	UNIV CALIF-SAN DIEGO	Timothy, A. F.	HQ-ST	Peterson, L. E.	NSG 7161	1570
13	UNIV CALIF-SAN DIEGO	Bohlin, J. D.	HQ-ST	Canfield, R. C.	NSG 7406	1573
13	UNIV CALIF-S BARBARA	Cassen, P.	ARC	Peale, S. J.	NCA 2-680805	1592
13	UNIV OF CHICAGO	Davis, M. A.	GSFC	Simpson, J. A.	NAS 5-11067	2029
13	UNIV OF CHICAGO	Gallagher, W. F.	GSFC	Meyer, P.	NAS 5-20674	2030
13	UNIV OF CHICAGO	Davis, M. A.	GSFC	Simpson, J. A.	NAS 5-24430	2031
13	UNIV OF CHICAGO	Harris, J. W.	JSC	Anders, E.	NGL 14-001-167	2038
13	UNIV OF CHICAGO	Harris, J. W.	JSC	Smith, J. V.	NGL 14-001-171	2040
13	UNIV OF CINCINNATI	Blue, J. W.	LERC	Jha, S.	NSG 3091	3143
13	UNIV COLORADO-BOLDR	Bissell, E. E.	GSFC	Rottman, G. T.	NSG 5178	1712
13	UNIV COLORADO-BOLDR	Harris, J. W.	JSC	Larson, E. E.	NGR 06-003-181	1701
13	UNIV COLORADO-BOLDR	Rosendhal, J.	HQ-SC	Timothy, J.	NSG 7459	1727
13	UNIV COLORADO-BOLDR	Rosendhal, J.	HQ-SC	Thomas, R.	NSG 7460	1728
13	UNIV COLORADO-BOLDR	Strickland, A. T.	HQ-SL	Levine, J.	NSG 7344	1725
13	UNIV COLORADO-BOLDR	Bohlin, J. D.	HQ-ST	Gebbie, K. B.	NGL 06-003-057	1695
13	UNIV COLORADO-BOLDR	Bohlin, J. D.	HQ-ST	Hansen, E.	NSG 7130	1718
13	UNIV COLORADO-BOLDR	Bohlin, J. D.	HQ-ST	Chipman, E. G.	NSG 7165	1719
13	UNIV COLORADO-BOLDR	Timothy, A. F.	HQ-ST	Roberts, W. O.	NSG 7166	1720
13	UNIV COLORADO-BOLDR	Bohlin, J. D.	HQ-ST	Dulk, G. A.	NSG 7287	1722
13	UNIV COLORADO-BOLDR	Bohlin, J. D.	HQ-ST	Thomas, R. N.	NSG 7291	1723
13	UNIV DC-MT VERNON SQ	Ormes, J. F.	GSFC	Whiteside, H.	NGR 09-050-001	1843
13	UNIV DC-MT VERNON SQ	Mentall, J. E.	GSFC	Morgan, H. D.	NSG 5192	1846
13	UNIV OF DENVER	Munoz, R. M.	ARC	Murcray, D. G.	NAS 2-8200	1732
13	UNIV OF DENVER	Schmerling, E. R.	HQ-ST	Patel, V. L.	NGR 06-004-058	1741
13	UNIV OF DENVER	Taylor, W. W.	HQ-ST	Roederer, J. G.	NGR 06-004-060	1742
13	UNIV OF FLORIDA	Thom, K.	HQ-RR	Schneider, R. T.	NGL 10-005-089	1886
13	UNIV OF FLORIDA	Thom, K.	HQ-RR	Schneider, R. T.	NSG 7299	1901
13	UNIV HOUSTON-HOUSTON	Kondo, Y.	JSC	Hildebrandt, A. F.	NGR 44-005-137	3480
13	UNIV HOUSTON-CL LAKE	Harris, J. W.	JSC	Blanford, G. E.	NSG 9043	3493
13	UNIV ILLINOIS-URBANA	Spencer, N. W.	GSFC	Sechrist, C. F., Jr.	NSG 5213	2081
13	UNIV ILLINOIS-URBANA	Hohl, F.	LARC	Miley, G. H.	NSG 1547	2075
13	UNIV ILLINOIS-URBANA	Dunning, J. W., Jr.	LERC	Verdeyen, J. T.	NGR 14-005-200	2070
13	UNIV OF IOWA	Davis, M. A.	GSFC	Frank, L. A.	NAS 5-11064	2147
13	UNIV OF IOWA	Davis, M. A.	GSFC	Gurnett, D. A.	NAS 5-20093	2150
13	UNIV OF IOWA	Davis, M. A.	GSFC	Frank, L. A.	NAS 5-20094	2151
13	UNIV OF IOWA	Fellerman, K. D.	GSFC	Frank, L. A.	NAS 5-24293	2152
13	UNIV OF IOWA	Fellerman, K. D.	GSFC	Shawhan, S. D.	NAS 5-24294	2153
13	UNIV OF IOWA	Heppner, J. P.	GSFC	Gurnett, D. A.	NAS 5-24336	2154
13	UNIV OF IOWA	Coffee, C. W., Jr.	LARC	VanAllen, J. A.	NAS 1-13129	2145
13	UNIV OF IOWA	Henry, W.	HQ-RR	Stwalley, W. C.	NSG 7471	2164
13	UNIV OF IOWA	King, J. H.	HQ-ST	VanAllen, J. A.	NGL 16-001-002	2156
13	UNIV OF IOWA	King, J. H.	HQ-ST	Gurnett, D. A.	NGL 16-001-043	2157

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13	UNIV OF KENTUCKY	Cochran, T. H.	LERC	Lienhard, J. H.	NAS 3-20397	2206
13	UNIV MARYLAND-COL PK	Davis, M. A.	GSFC	Gloeckler, G.	NAS 5-11063	2280
13	UNIV MARYLAND-COL PK	Davis, M. A.	GSFC	Gloeckler, G.	NAS 5-20062	2281
13	UNIV MARYLAND-COL PK	Conrath, B. J.	GSFC	Ponnamperuma, C. A.	NAS 5-23237	2284
13	UNIV MARYLAND-COL PK	Ogilvie, K. W.	GSFC	Coplan, M. A.	NGR 21-002-291	2309
13	UNIV MARYLAND-COL PK	Teegarden, B. J.	GSFC	Gloeckler, G.	NGR 21-002-316	2310
13	UNIV MARYLAND-COL PK	Johnson, T. S.	GSFC	Alley, C. O.	NSG 5129	2330
13	UNIV MARYLAND-COL PK	Bissell, E. E.	GSFC	Moore, J. H.	NSG 5177	2334
13	UNIV MARYLAND-COL PK	Simoneau, R. J.	LERC	Sengers, J. V.	NGR 21-002-344	2312
13	UNIV MARYLAND-COL PK	Coles, W. D.	LERC	Spain, I. L.	NGR 21-002-400	2315
13	UNIV MARYLAND-COL PK	Lundholm, J. G., Jr.	HQ-RR	Weber, J.	NSG 7196	2341
13	UNIV MARYLAND-COL PK	Bohlin, J. D.	HQ-ST	Kundu, M. R.	NGR 21-002-199	2306
13	UNIV MARYLAND-COL PK	Timothy, A. F.	HQ-ST	Kundu, M. R.	NSG 7285	2346
13	UNIV MARYLAND-COL PK	Tilford, S. G.	HQ-ST	Ginter, M. L.	NSG 7340	2348
13	UNIV MARYLAND-COL PK	Bohlin, J. D.	HQ-ST	Spicer, D. S.	NSG 7427	2350
13	UNIV MD-EASTRN SHORE	Trafford, G. H.	WFC	Singh, G.	NGR 21-119-003	2352
13	UNIV OF MASS-AMHERST	Harris, J. W.	JSC	Haggerty, S. E.	NGL 22-010-089	2552
13	UNIV MICH-ANN ARBOR	Trainor, J. H.	GSFC	MacNee, A. B.	NAS 5-22875	2574
13	UNIV MICH-ANN ARBOR	Fellerman, K. D.	GSFC	Carrignan, G. R.	NAS 5-24295	2578
13	UNIV MICH-ANN ARBOR	Fellerman, K. D.	GSFC	Hays, P. B.	NAS 5-24296	2579
13	UNIV MICH-ANN ARBOR	Hoffman, R. A.	GSFC	Nagy, A. F.	NAS 5-25038	2584
13	UNIV MICH-ANN ARBOR	Haykin, D.	GSFC	Carignan, G. R.	NAS 5-25158	2587
13	UNIV MICH-ANN ARBOR	Bissell, E. E.	GSFC	Sharp, W. E.	NGR 23-005-360	2602
13	UNIV MICH-ANN ARBOR	Cauffman, D. P.	HQ-ST	Samir, U.	NGR 23-005-320	2601
13	U MINN-MNPLS-ST PAUL	Bissell, E. E.	GSFC	Winckler, J. R.	NSG 5088	2659
13	U MINN-MNPLS-ST PAUL	Harris, J. W.	JSC	Pepin, R. O.	NGL 24-005-225	2648
13	U MINN-MNPLS-ST PAUL	Harris, J. W.	JSC	Murthy, V. R.	NGR 24-005-223	2651
13	U MINN-MNPLS-ST PAUL	Sovey, J. S.	LERC	Wehner, G. K.	NSG 3041	2657
13	U MINN-MNPLS-ST PAUL	Lundholm, J. G., Jr.	HQ-RR	Scriven, L. E.	NSG 7296	2669
13	UNIV NEBRASKA-LINCLN	Kalet, M. W.	GSFC	Samson, J. R.	NAS 5-22903	2734
13	UNIV NEW HAMP-DURHAM	Trainor, J. H.	GSFC	Webber, W. R.	NAS 5-24354	2755
13	UNIV NEW HAMP-DURHAM	Bohlin, J. D.	HQ-ST	Chupp, E. L.	NGL 30-002-018	2756
13	UNIV NEW HAMP-DURHAM	Bohlin, J. D.	HQ-ST	Fisk, L. A.	NSG 7411	2761
13	UNIV OF NOTRE DAME	Scott, J. N.	LERC	Atassi, H.	NSG 3195	2127
13	UNIV OKLAHOMA-NORMAN	Bryant, F. R.	LARC	Kahng, S. K.	NSG 1404	3186
13	UNIV OREGON-EUGENE	Whiting, E. E.	ARC	Crasemann, B.	NGR 38-003-036	3203
13	UNIV OREGON-EUGENE	Harris, J. W.	JSC	Weill, D. F.	NGL 38-003-022	3201
13	UNIV OF PENNSYLVANIA	Shiue, J.	GSFC	Kritikos, H. N.	NAS 5-25136	3283
13	UNIV OF PITTSBURGH	Kostiuk, T.	GSFC	Falk, J.	NAS 5-25013	3290
13	UNIV OF PITTSBURGH	Harris, J. W.	JSC	Hapke, B. W.	NSG 9056	3306
13	UNIV OF PITTSBURGH	Brown, G. V.	LERC	Wallace, W. E.	NSG 3168	3301
13	UNIV OF ROCHESTER	Stallcop, J. R.	ARC	George, T. F.	NSG 2198	3023
13	UNIV OF ROCHESTER	Osantowski, J. F.	GSFC	Baumeister, P. W.	NAS 5-20028	3022
13	UNIV SAN FRANCISCO	Souza, K. A.	ARC	Benton, E. V.	NAS 2-9504	1602
13	UNIV SAN FRANCISCO	Thirolf, R. G.	JSC	Benton, E. V.	NAS 9-15337	1606
13	UNIV SAN FRANCISCO	Parnell, T. A.	MSFC	Benton, E. V.	NAS 8-26758	1604
13	UNIV OF SANTA CLARA	Whitten, R. C.	ARC	McCormick, P. T.	NCA 2-685809	1620
13	UNIV OF SANTA CLARA	Dyal, P.	ARC	Barker, W. A.	NCA 2-685811	1622
13	UNIV OF SANTA CLARA	Steger, J. L.	ARC	Walsh, D.	NSG 2086	1626
13	UNIV OF SOUTHERN CAL	Bissell, E. E.	GSFC	Judge, D. L.	NSG 5108	1646
13	UNIV OF SOUTHERN CAL	Lewis, B. W.	LARC	Walsh, D.	NSG 1528	1644
13	UNIV OF SOUTHERN CAL	Cauffman, D. P.	HQ-ST	Intriligator, D. S.	NGR 05-018-181	1640
13	UNIV OF SOUTHERN CAL	Cauffman, D. P.	HQ-ST	Intriligator, D. S.	NGR 05-018-185	1641
13	UNIV OF SYDNEY	Melfi, L. T., Jr.	LARC	Bird, G. A.	NSG 7272	3850
13	UNIV TEXAS-AUSTIN	Eichelman, W. F.	JSC	Latham, G. V.	NAS 9-14581	3505
13	UNIV TEXAS-AUSTIN	Eichelman, W. F.	JSC	Latham, G. V.	NAS 9-14810	3506
13	UNIV TEXAS-AUSTIN	Rice, E. J.	LERC	Blackstock, D. T.	NSG 3198	3531
13	UNIV TEXAS-DALLAS	Fellerman, K. D.	GSFC	Heelis, R. A.	NAS 5-24297	3551

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13	UNIV TEXAS-DALLAS	Fellerman, K. D.	GSFC	Hanson, W. B.	NAS 5-24298	3552
13	UNIV TEXAS-DALLAS	Fellerman, K. D.	GSFC	Winningham, J. D.	NAS 5-24299	3553
13	UNIV TEXAS-DALLAS	Bissell, E. E.	GSFC	Winningham, J. D.	NGR 44-004-124	3562
13	UNIV TEXAS-DALLAS	Chappell, C. R.	MSFC	Hanson, W. B.	NAS 8-32831	3557
13	UNIV TEXAS-DALLAS	Cauffman, D. P.	HQ-ST	Heikkila, W. J.	NGR 44-004-030	3560
13	UNIV TEXAS-EL PASO	Breckenridge, R. A.	LARC	Eastman, M. P.	NSG 1316	3569
13	U TEX HEALTH CTR-SA	Harris, J. W.	JSC	Morgan, J. W.	NSG 9049	3576
13	UNIV TEXAS-S ANTONIO	Spencer, N. W.	GSFC	Burch, J. L.	NSG 5214	3579
13	UNIV OF TOLEDO	Connolley, D. J.	LERC	Rush, W. F.	NSG 3099	3157
13	UNIV OF UTAH	Randolph, L. P.	HQ-RR	Vali, V.	NASW 2967	3587
13	UNIV OF WASHINGTON	Schwenk, F. C.	HQ-RR	Hertzberg, A.	NGL 48-002-044	3767
13	UNIV WISC-MADISON	Squires, R. K.	GSFC	Suomi, V. E.	NAS 5-20974	3799
13	UNIV WISC-MADISON	Cauffman, D. P.	HQ-ST	Scherb, F.	NGR 50-002-162	3817
13	UTAH STATE UNIV	Stouffer, C. G.	GSFC	Banks, P. M.	NAS 5-24455	3594
13	UTAH STATE UNIV	Spencer, N. W.	GSFC	StMaurice, J. P.	NSG 5215	3597
13	UTAH STATE UNIV	Spencer, N. W.	GSFC	Foster, J. C.	NSG 5216	3598
13	VANDERBILT UNIVERSTY	Hohl, F.	LARC	Lee, J. H.	NSG 1235	3376
13	VANDERBILT UNIVERSTY	Exton, R. J.	LARC	Tellinghuisen, J. B.	NSG 1408	3377
13	VANDERBILT UNIVERSTY	Nichols, R. L.	MSFC	Kinser, D. L.	NAS 8-30656	3370
13	VIRGINIA POLY INST	Posey, J.	LARC	Nayfeh, A. H.	NAS 1-13884	3710
13	VIRGINIA POLY INST	Smith, A.	LARC	Sanzone, G.	NSG 1020	3721
13	VIRGINIA STATE COL	Singh, J. J.	LARC	Stronach, C. E.	NSG 1342	3755
13	WASHINGTON ST UNIV	Poppa, H. R.	ARC	Dickinson, J. T.	NCA 2-840801	3789
13	WASHINGTON UNIVERSTY	Harris, J. W.	JSC	Walker, R. M.	NGL 26-008-065	2720
13	WASHINGTON UNIVERSTY	Heyman, J. S.	LARC	Miller, J. G.	NSG 1392	2722
13	WILLIAMS COLLEGE	Reinhardt, V. S.	GSFC	Crampton, S. B.	NSG 5218	2557
13	XAVIER UNIV-LA	Wood, G. M.	LARC	Ioup, J. W.	NSG 1361	2241
13	YORK COLLEGE-NY	Quaide, W. L.	HQ-SL	Spergel, M. S.	NSG 7454	3029
19	ARIZONA STATE UNIV	Black, D. C.	ARC	Greeley, R.	NSG 2284	1085
19	ATHENS STATE COLLEGE	Zwiener, J. M.	MSFC	Workman, G. L.	NAS 8-32920	1017
19	BOSTON UNIVERSITY	Taylor, W. W.	HQ-ST	Mendillo, M.	NSG 7254	2365
19	CALIF INST OF TECH	Harris, J. W.	JSC	Ahrens, T. J.	NSG 9019	1214
19	CALIF INST OF TECH	Dwornik, S. E.	HQ-SL	Albee, A. L.	NSG 7125	1204
19	CASE WESTERN RESERVE	Mirtich, M. J.	LERC	Topich, J. A.	NSG 3131	3081
19	COLLEGE OF WM & MARY	King, J. H.	HQ-ST	Montgomery, D. C.	NSG 7416	3616
19	COLORADO STATE UNIV	Domitz, S.	LERC	Kaufman, H. R.	NSG 3038	1669
19	COLUMBIA UNIVERSITY	Smith, D. E.	GSFC	Scholz, C. H.	NGR 33-008-146	2863
19	COLUMBIA UNIVERSITY	Seltzer, S. M.	MSFC	Likins, P. A.	NAS 8-32212	2859
19	CORNELL UNIVERSITY	Gray, J. W.	WFC	Kelley, M. C.	NSG 6020	2916
19	GEORGE WASHINGTON U	Levine, D. M.	GSFC	Lang, R. H.	NAS 5-23809	1785
19	GEORGIA INST OF TECH	Hohl, F.	LARC	Clement, J. D.	NSG 1288	1951
19	HAMPTON INSTITUTE	Erickson, W. D.	LARC	Darden, G. C.	NAS 1-14832	3621
19	HAMPTON INSTITUTE	Hoge, F. E.	WFC	Trehan, A. K.	NGR 47-020-006	3623
19	HUMBOLDT STATE UNIV	Lamb, D. R.	ARC	Hankins, D.	NSG 2244	1234
19	MASS INST OF TECH	Gluyas, R. E.	LERC	Senturia, S. D.	NSG 3061	2506
19	MORGAN STATE UNIV	Pohly, J. G.	HQ-LU	Proctor, N. K.	NGT 21-025-006	2275
19	OLD DOMINION UNIV	Fowler, W. B.	GSFC	Becher, J.	NSG 5053	3679
19	OLD DOMINION UNIV	Gapcynski, J. P.	LARC	Breedlove, W. J., Jr.	NSG 1152	3641
19	PENN STATE U-UNIV PK	Duke, J. R.	WFC	Hale, L. C.	NAS 6-2602	3244
19	PENN STATE U-UNIV PK	Gray, J. W.	WFC	Ferguson, G. A.	NSG 6004	3276
19	PRINCETON UNIVERSITY	Williams, T. S., Jr.	LARC	Hargraves, R. B.	NAS 1-9705	2762
19	RENSSELAER POLY-NY	Davidson, M. C.	MSFC	Wiedemeier, H.	NAS 8-32639	2960
19	RENSSELAER POLY-NY	Gevarter, W. B.	HQ-RE	Shen, C. N.	NSG 7184	2974
19	STANFORD UNIVERSITY	Snyder, C. T.	ARC	Karamcheti, K.	NSG 2007	1347
19	STANFORD UNIVERSITY	Soderman, P. T.	ARC	Karamcheti, K.	NSG 2215	1358
19	STANFORD UNIVERSITY	Oseroff, H.	GSFC	MacOvski, A.	NAS 5-23522	1290
19	STANFORD UNIVERSITY	Ostrow, H.	GSFC	MacOvski, A.	NAS 5-25043	1295
19	STANFORD UNIVERSITY	Mangus, J. D.	GSFC	Walker, A. B., Jr.	NSG 5132	1378

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19	STANFORD UNIVERSITY	McCoy, J. E.	JSC	Helliwell, R. A.	NAS 9-15342	1302
19	STATE U NY-STONY BRK	Boese, R. W.	ARC	Lutz, B. L.	NCA 2-760801	2995
19	TEXAS A&M UNIVERSITY	Stonesifer, G. R.	GSFC	Harlan, J. C.	NAS 5-24383	3431
19	UNIV ALA-HUNTSVILLE	Morgan, S. H.	MSFC	Wu, S. T.	NAS 8-33132	1060
19	UNIV ALASKA-FAIRBNKS	Gray, J. W.	WFC	Davis, T. N.	NSG 6014	1073
19	UNIV ARKANSAS-FAYETV	Demel, K. J.	JSC	Waite, W. P.	NAS 9-14251	1157
19	UNIV CALIF-BERKELEY	Padrick, B. D.	ARC	Colwell, R. N.	NSG 2243	1434
19	UNIV CALIF-BERKELEY	Roberts, W. T.	MSFC	Mozer, F. S.	NAS 8-31346	1398
19	UNIV CALIF-BERKELEY	King, J. H.	HQ-ST	Anderson, K. A.	NGL 05-003-017	1411
19	UNIV CALIF-BERKELEY	Kaiser, M. L.	HQ-ST	Mozer, F. S.	NSG 7401	1452
19	UNIV CALIF-L ANGELES	Riccitiello, S. R.	ARC	MacKenzie, J. D.	NSG 2321	1497
19	UNIV CALIF-L ANGELES	King, J. H.	HQ-ST	Kennel, C. F.	NGL 05-007-190	1480
19	UNIV CALIF-SAN DIEGO	Salzman, J. A.	LERC	Austin, R. W.	NAS 3-21386	1527
19	UNIV CALIF-SAN DIEGO	Woollam, J. A.	LERC	Webb, G. W.	NSG 3055	1562
19	UNIV CALIF-SAN DIEGO	Quaide, W. L.	HQ-SL	Suess, H. E.	NGL 05-009-005	1544
19	UNIV CALIF-S BARBARA	Harris, J. W.	JSC	Fuller, M. D.	NSG 9020	1600
19	UNIV COLORADO-BOLDR	Sinnott, D. B.	ARC	Stewart, A. I.	NAS 2-8816	1682
19	UNIV COLORADO-BOLDR	Hall, C. F.	ARC	Stewart, I.	NAS 2-9477	1683
19	UNIV COLORADO-BOLDR	Bissell, E. E.	GSFC	Barth, C. A.	NSG 5103	1708
19	UNIV DC-VAN NESS	Chappelle, E. W.	GSFC	Watlington, R. A.	NSG 5290	1849
19	UNIV OF DENVER	Goldberg, R.	GSFC	Barcus, J. R.	NAS 5-22981	1733
19	UNIV OF HAWAII-MANOA	Shirey, W. H.	HQ-SL	Berg, E.	NSG 7179	1998
19	UNIV HOUSTON-HOUSTON	Jackson, J. T.	JSC	Morrow, J. R.	NAS 9-15521	3473
19	UNIV HOUSTON-HOUSTON	Gray, J. W.	WFC	Sheldon, W. R.	NSG 6008	3485
19	UNIV ILLINOIS-URBANA	Bufton, J. L.	GSFC	Gardner, C. S.	NSG 5049	2080
19	UNIV ILLINOIS-URBANA	Jordan, F. L., Jr.	LARC	Ormsbee, A. I.	NSG 1400	2072
19	UNIV ILLINOIS-URBANA	Gray, J. W.	WFC	Bowhill, S. A.	NGR 14-005-181	2069
19	UNIV MARYLAND-COL PK	O'Keefe, J. A.	GSFC	Pai, S. I.	NSG 5083	2324
19	UNIV MARYLAND-COL PK	Wasilewski, P. J.	GSFC	Weidner, J. R.	NSG 5112	2327
19	UNIV MARYLAND-COL PK	King, J. H.	HQ-ST	Wu, C. S.	NGL 21-002-005	2300
19	UNIV MICH-ANN ARBOR	Ruff, R. C.	MSFC	Carignan, G. R.	NAS 8-31987	2589
19	UNIV MICH-ANN ARBOR	Chappell, C. R.	MSFC	Carignan, G. R.	NAS 8-32332	2590
19	UNIV MICH-ANN ARBOR	Jones, C.	MSFC	Torr, M. R.	NAS 8-32569	2591
19	U MINN-MNPLS-ST PAUL	Morris, J. F.	LERC	Chanin, L. M.	NSG 3094	2658
19	U MINN-MNPLS-ST PAUL	Ballance, C. W., Jr.	WFC	Arnoldy, R. J.	NSG 6005	2661
19	U MINN-MNPLS-ST PAUL	Gray, J. W.	WFC	Nier, A. O.	NSG 6009	2662
19	U MINN-MNPLS-ST PAUL	Gray, J. W.	WFC	Cahill, L. J., Jr.	NSG 6021	2663
19	U MINN-MNPLS-ST PAUL	Taylor, W. L.	HQ-ST	Kellogg, P. J.	NSG 7108	2665
19	U MINN-MNPLS-ST PAUL	Cauffman, D. P.	HQ-ST	Cahill, L. J., Jr.	NSG 7237	2667
19	UNIV MO-ROLLA	Weigand, A. J.	LERC	Yasuda, H. K.	NSG 3199	2714
19	UNIV OF NEVADA-RENO	Smith, R. E.	MSFC	Telford, J. W.	NAS 8-31441	2746
19	UNIV NEW HAMP-DURHAM	Wende, C. D.	GSFC	Arnoldy, R. L.	NAS 5-24328	2754
19	UNIV NEW HAMP-DURHAM	Gray, J. W.	WFC	Arnoldy, R. L.	NSG 6022	2760
19	UNIV OF PITTSBURGH	Gray, J. W.	WFC	Zipf, E. C., Jr.	NSG 6011	3304
19	UNIV STHN COLORADO	Lofgren, G.	JSC	Smith, R. K.	NSG 9051	1751
19	UNIV SO MISSISSIPPI	Wood, G. M.	LARC	Rayborn, G. H.	NSG 1515	2696
19	UNIV TEXAS-AUSTIN	Blanchard, M. B.	ARC	Nakamura, Y.	NSG 2310	3527
19	UNIV TEXAS-AUSTIN	Kahn, W. D.	GSFC	Tapley, B. D.	NAS 5-25018	3498
19	UNIV TEXAS-AUSTIN	Flinn, E. A.	HQ-ER	Dorman, J. H.	NSG 7159	3537
19	UNIV TEXAS-AUSTIN	Flinn, E. A.	HQ-ER	Shelus, P. J.	NSG 7162	3538
19	UNIV TEXAS-AUSTIN	Shirey, W. H.	HQ-SM	Silverberg, E. C.	NASW 2974	3512
19	UNIV TEXAS-DALLAS	Chappell, C. R.	MSFC	Hanson, W. B.	NAS 8-31775	3555
19	UNIV TEXAS-DALLAS	Ballance, C. W., Jr.	WFC	Christensen, A. B.	NSG 6012	3566
19	UNIV TEXAS-DALLAS	Gray, J. W.	WFC	Christensen, A. B.	NSG 6023	3567
19	UNIV OF UTAH	Williams, T. S., Jr.	LARC	Shorthill, R. W.	NAS 1-12705	3581
19	UNIV OF WASHINGTON	Hall, D.	GSFC	Trowbridge, R.	NAS 5-25125	3759
19	VIRGINIA POLY INST	Maahs, H. G.	LARC	Frair, K. L.	NSG 1275	3730
19	WASHINGTON UNIVERSTY	Williams R. J.	JSC	Haskin, L. A.	NSG 9073	2730

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21	ARIZONA STATE UNIV	Lee, G.	MSFC	Woodfin, M. A.	NAS 8-32230	1078
21	BOWIE STATE COLLEGE	Lefferts, E. J.	GSFC	Srivastava, S.	NGR 21-027-004	2244
21	CASE WESTERN RESERVE	Neustadter, H. E.	LERC	Zacks, S.	NSG 3078	3077
21	CHRISTPHR NEWPRT COL	Lansing, D. L.	LARC	Buoncristiani, A. M.	NSG 1429	3607
21	COLLEGE OF WM & MARY	Staaeter, T. A.	LARC	Donegan, M. K.	NSG 1435	3614
21	COLORADO STATE UNIV	Steger, J. L.	ARC	Thomas, J. W.	NCA 2-165801	1656
21	COLORADO STATE UNIV	Murphy, J. D.	ARC	Prenter, P. M.	NCA 2-165901	1657
21	COLUMBIA UNIVERSITY	Jennings, N.	GSFC	Lewis, J. P.	NAS 5-24452	2854
21	DREXEL UNIVERSITY	Zeleznik, F. J.	LERC	Rosen, G. H.	NSG 3090	3219
21	DUKE UNIVERSITY	Ford, W. F.	LERC	Smith, D. A.	NSG 3160	3035
21	GEORGE WASHINGTON U	Craidon, J. B.	LARC	Foley, J. D.	NSG 1508	1809
21	GEORGE WASHINGTON U	Credeur, K. R.	LARC	Gross, D.	NSG 1556	1811
21	HAMPTON INSTITUTE	Straeter, T. A.	LARC	Hargrove, A.	NSG 1478	3626
21	HOWARD UNIVERSITY	Laughlin, C. R.	GSFC	Gill, T. L.	NSG 5295	1839
21	IOWA STATE UNIV	Steger, J. L.	ARC	Tannehill, J. C.	NCA 2-340706	2131
21	IOWA STATE UNIV	Shoosmith, J. N.	LARC	Feinberg, R. B.	NSG 1538	2139
21	LEHIGH UNIVERSITY	Everett, R. A., Jr.	LARC	Erdogan, F.	NGR 39-007-011	3231
21	MARY BALDWIN COLLEGE	Campbell, J. W.	LARC	Sawyer, J. O.	NSG 1209	3629
21	NEW YORK UNIVERSITY	South, J. C., Jr.	LARC	Garabedian, P. R.	NGR 33-016-167	2930
21	NO CAROLINA STATE U	Shoosmith, J. N.	LARC	Meyer, C. D., Jr.	NSG 1532	3056
21	SO ILL UNIV-CARBONDL	Callas, G. P.	ARC	McCalla, T. M.	NSG 2238	2026
21	STANFORD UNIVERSITY	Shoosmith, J. N.	LARC	Golub, G. H.	NSG 1443	1346
21	UNIV DC-MT VERNON SQ	Lefferts, E. J.	GSFC	Bakshi, J. S.	NSG 5122	1845
21	UNIV HOUSTON-HOUSTON	Browne, I. D.	JSC	Decell, H. P., Jr.	NAS 9-15000	3471
21	UNIV ILLINOIS-CHICGO	Randolph, L. P.	HQ-RR	Barcilon, V.	NSG 7247	2062
21	UNIV ILLINOIS-URBANA	Will, R. W.	LARC	Campbell, R. H.	NSG 1471	2074
21	UNIV MARYLAND-COL PK	Gevarter, W. B.	HQ-RE	Minker, J.	NGR 21-002-270	2308
21	UNIV OF MIAMI	Tucker, J. H.	LARC	Tapia, M. A.	NSG 1436	1913
21	UNIV OF SO FLORIDA	Park, S. K.	LARC	Tsokos, C. P.	NSG 1159	1917
21	UNIV OF SO FLORIDA	Park, S. K.	LARC	Tsokos, C. P.	NSG 1487	1919
21	UNIV TENNESSEE-KNOXV	Smith, R. E.	LARC	Baker, A. J.	NSG 1391	3363
21	UNIV TEXAS-AUSTIN	Fuchs, A. J.	GSFC	Tapley, B. D.	NSG 5154	3533
21	UNIV TEXAS-AUSTIN	Shoosmith, J. N.	LARC	Daniel, J. W.	NSG 1440	3522
21	UNIV OF VIRGINIA	Bowles, R. L.	LARC	Brown, R. L., Jr.	NSG 1335	3694
21	UNIV WISC-MADISON	Campbell, J. W.	LARC	Johnson, R. A.	NSG 1196	3821
21	VIRGINIA POLY INST	Campbell, J. W.	LARC	Myers, R. H.	NSG 1376	3736
21	WICHITA STATE UNIV	Smith, J. M.	LERC	Greywall, M. S.	NSG 3186	2203
22	AUBURN UNIV-AUBURN	Cummings, R. E.	MSFC	Vachon, R. I.	NAS 8-30654	1019
22	CAL STATE U-FULLERTN	Tobias, L.	ARC	Dear, R. G.	NCA 2-253801	1219
22	CAL STATE U-NRTHRDGE	Anderson, K. F.	DFRC	Abbott, R. J.	NSG 4011	1229
22	CAL STATE U-NRTHRDGE	Greene, E. P.	GSFC	Nathanson, W. I.	NAS 5-24436	1227
22	GEORGIA INST OF TECH	Pearson, R.	NSTL	Faust, N. L.	NAS13-84	1949
22	MASS INST OF TECH	Shoosmith, J. N.	LARC	Moses, J.	NSG 1323	2480
22	MISSISSIPPI STATE U	Hogge, J. E.	LARC	Butler, C. M.	NSG 1375	2687
22	MISSISSIPPI STATE U	Hendrix, N. D.	MSFC	Mitchell, J. R.	NAS 8-32810	2680
22	NO CAROLINA STATE U	Park, S. K.	LARC	Roulier, J. A.	NSG 1549	3057
22	PENN STATE U-UNIV PK	Raney, J. L.	JSC	Stocker, F. J.	NAS 9-15427	3249
22	PENN STATE U-UNIV PK	Smith, R. F.	LARC	Stocker, F. R.	NSG 1328	3261
22	PURDUE UNIVERSITY	Gregory, T. J.	ARC	Anderson, D. C.	NSG 2192	2110
22	PURDUE UNIVERSITY	Alford, W. L.	GSFC	Phillips, T. L.	NAS 5-24462	2097
22	TEXAS A&M UNIVERSITY	Browne, I. D.	JSC	Freund, R. J.	NAS 9-13894	3438
22	TEXAS A&M UNIVERSITY	Browne, I. D.	JSC	Guseman, L. F., Jr.	NAS 9-14689	3440
22	UNIV ALA-HUNTSVILLE	Jones, R. E.	MSFC	Shiva, S. G.	NAS 8-33096	1059
22	UNIV OF DENVER	Hargrave, C.	HQ-ET	Unavailable	NASW 2992	1738
22	UNIV ILLINOIS-URBANA	Slye, R. E.	ARC	Ray, R. M.	NGR 14-005-202	2071
22	UNIV MARYLAND-COL PK	Barsky, J.	GSFC	Agrawala, A. K.	NAS 5-24407	2288
22	UNIV MARYLAND-COL PK	Randolph, L. P.	HQ-RR	Reiger, C. J.	NSG 7253	2343
22	UNIV MO-COLUMBIA	Migneault, G. E.	LARC	Miller, D. R.	NSG 1540	2705

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22	UNIV OF SANTA CLARA	Ballhaus, W. F.	ARC	Drobot, V.	NCA 2-685803	1615
22	UNIV OF SANTA CLARA	Hofman, L.	ARC	Danielson, R. L.	NCA 2-685804	1616
22	UNIV OF SANTA CLARA	Hofman, L.	ARC	Danielson, R. L.	NCA 2-685810	1621
22	UNIV TENNESSEE-KNOXV	Smith, R. E.	LARC	Baker, A. J.	NSG 1529	3364
22	UNIV TEXAS-AUSTIN	Shipman, F. S.	LARC	Browne, J. C.	NSG 1446	3523
22	UNIV TEXAS-AUSTIN	Will, R. W.	LARC	Browne, J. C.	NSG 1479	3524
22	UNIV TEXAS-AUSTIN	Schiess, J. R.	LARC	Cline, A. K.	NSG 1544	3525
22	UNIV OF VIRGINIA	Will, R. W.	LARC	Berman, W. J.	NAS 1-14862	3682
22	UNIV OF VIRGINIA	Barker, L. E.	LARC	Parrish, E. A., Jr.	NSG 1403	3697
22	UNIV OF VIRGINIA	Will, R. W.	LARC	Pratt, T. W.	NSG 1458	3699
22	VIRGINIA POLY INST	Straeter, T. A.	LARC	Frair, L. C.	NSG 1525	3744
31	ALCORN STATE UNIV	Schmid, P. E.	GSFC	Paul, M. P.	NGR 25-012-001	2672
31	ARIZONA STATE UNIV	Spence, D. C.	LARC	Greeley, R.	NAS 1-15168	1077
31	ARIZONA STATE UNIV	Camp, D. W.	MSFC	Logan, E., Jr.	NAS 8-32357	1079
31	AUGSBURG COLLEGE	Spencer, N. W.	GSFC	Engebretson, M. J.	NSG 5285	2637
31	BOSTON UNIVERSITY	Guynes, B. V.	MSFC	Mendillo, M.	NAS 8-32844	2361
31	CALIF INST OF TECH	Pollack, J. B.	ARC	Yung, Y. L.	NSG 2229	1194
31	CALIF INST OF TECH	Pollack, J. B.	ARC	Yung, Y. L.	NSG 2283	1195
31	CALIF INST OF TECH	Nelsen, E. D.	GSFC	Ingersoll, A. P.	NAS 5-22965	1166
31	CALIF INST OF TECH	Hansen, J. E.	GSFC	Yung, Y. L.	NSG 5301	1202
31	CALIF INST OF TECH	Mitz, M. A.	HQ-SL	Yung, Y. L.	NSG 7376	1210
31	CAL STATE U-FULLERTN	Ward, J. C., Jr.	LARC	Ryan, J. A.	NAS 1-14621	1217
31	CATHOLIC UNIVERSITY	Payne, W. A.	GSFC	Hunt, J. B.	NSG 5173	1782
31	CITY COLLEGE OF N Y	Hansen, J. E.	GSFC	Spar, J.	NGR 33-013-086	2841
31	CITY COLLEGE OF N Y	Hess, R. V.	LARC	Tchen, C. M.	NSG 1485	2843
31	CLARK COLLEGE	Whitten, R. C.	ARC	Walker, G. H.	NSG 2143	1924
31	COLLEGE OF WM & MARY	Russell, J. M., III	LARC	Park, J. H.	NSG 1203	3612
31	COLLEGE OF WM & MARY	Russell, J. M., III	LARC	Park, J. H.	NSG 1484	3615
31	COLORADO STATE UNIV	Shimazaki, T.	ARC	Reiter, E. R.	NSG 2253	1666
31	COLORADO STATE UNIV	Theon, J. S.	GSFC	Reiter, W. R.	NGR 06-002-098	1659
31	COLORADO STATE UNIV	Curran, R. J.	GSFC	VonDerHaar, T. H.	NGR 06-002-102	1660
31	COLORADO STATE UNIV	Adler, R. F.	GSFC	Cotton, W. R.	NSG 5011	1676
31	COLORADO STATE UNIV	Neil, E. A.	GSFC	Marlatt, W. E.	NSG 5073	1677
31	COLORADO STATE UNIV	Rodgers, E. B.	GSFC	VonDerHaar, T. H.	NSG 5258	1678
31	COLORADO STATE UNIV	Arking, A.	GSFC	VonDerHaar, T. H.	NSG 5259	1679
31	COLORADO STATE UNIV	Cooper, J. E.	LARC	VonDerHaar, T. H.	NAS 1-14538	1649
31	COLORADO STATE UNIV	Russell, J. M., III	LARC	Crutzen, P. J.	NAS 1-15129	1650
31	COLUMBIA UNIVERSITY	Gemmell, J. D.	GSFC	Novick, R.	NAS 5-22408	2851
31	COLUMBIA UNIVERSITY	Gemmell, J. D.	GSFC	Novick, R.	NAS 5-24152	2853
31	CORNELL UNIVERSITY	Pirraglia, J. A.	GSFC	Gierasch, P. J.	NAS 5-23785	2893
31	CORNELL UNIVERSITY	Costen, R. C.	LARC	Paine, D. A.	NSG 1365	2909
31	CORNELL UNIVERSITY	Donn, B. D.	HQ-SL	Sagan, C. E.	NGL 33-010-082	2896
31	CORNELL UNIVERSITY	Brunk, W. M.	HQ-SL	Gierasch, P. J.	NGL 33-010-186	2898
31	CORNELL UNIVERSITY	Quaide, W.	HQ-SL	Burns, J. A.	NSG 7445	2923
31	DARTMOUTH COLLEGE	Hansen, J. E.	GSFC	Self, S. L.	NSG 5145	2751
31	DREXEL UNIVERSITY	Ucellini, L. W.	GSFC	Kreitzberg, C.	NSG 5162	3221
31	DREXEL UNIVERSITY	Russell, J. M., III	LARC	House, F. B.	NAS 1-14393	3215
31	DREXEL UNIVERSITY	Smith, G. L.	LARC	House, F. B.	NSG 1545	3218
31	DREXEL UNIVERSITY	Holland, A. C.	WFC	Hackney, R. L.	NSG 6007	3222
31	FAIRFIELD UNIVERSITY	Heath, D. F.	GSFC	McElaney, J. H.	NGR 07-010-002	1752
31	FLORIDA STATE UNIV	McMaster, L. R.	LARC	Craig, R. A.	NAS 1-14930	1863
31	FLORIDA TECH UNIV	Smith, O. E.	MSFC	Somerville, P. N.	NAS 8-33071	1869
31	GEORGE WASHINGTON U	Callis, L. B., Jr.	LARC	Liebowitz, H.	NSG 1026	1796
31	GEORGE WASHINGTON U	Callis, L. B., Jr.	LARC	Liebowitz, H.	NSG 1216	1800
31	GEORGE WASHINGTON U	Costen, R. C.	LARC	Liebowitz, H.	NSG 1251	1801
31	GEORGE WASHINGTON U	Smith, G. L.	LARC	Liebowitz, H.	NSG 1555	1810
31	GEORGIA INST OF TECH	Ragent, B.	ARC	Grams, G. W.	NSG 2306	1955
31	GEORGIA INST OF TECH	Levine, D. M.	GSFC	Wilson, C. S.	NAS 5-24148	1937

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31	GEORGIA INST OF TECH	King, J. L.	GSFC	Dees, J. W.	NSG 5082	1963
31	GEORGIA INST OF TECH	Atlas, D.	GSFC	Metcalf, J. I.	NSG 5220	1964
31	GEORGIA INST OF TECH	Jafferis, W.	KSC	Woody, J. A.	NAS10-9210	1948
31	GEORGIA INST OF TECH	Lawrence, G. F.	LARC	Zimmer, R. P.	NAS 1-14351	1930
31	GEORGIA INST OF TECH	McMaster, L. R.	LARC	Grams, G. W.	NSG 1493	1954
31	GEORGIA INST OF TECH	Smith, O. E.	MSFC	Justus, C. G.	NAS 8-32897	1945
31	GEORGIA INST OF TECH	Fellows, R. F.	HQ-SL	Edwards, H. D.	NGL 11-002-004	1950
31	HARVARD UNIVERSITY	Spencer, C. W.	GSFC	McElroy, M. B.	NAS 5-23199	2370
31	HARVARD UNIVERSITY	Donley, J. L.	GSFC	Reeves, E. M.	NAS 5-23494	2371
31	HARVARD UNIVERSITY	Spencer, N. W.	GSFC	McElroy, M. B.	NAS 5-24134	2372
31	HARVARD UNIVERSITY	Halem, M.	GSFC	Lindzen, R. S.	NSG 5160	2392
31	HARVARD UNIVERSITY	Williams, T. S., Jr.	LARC	McElroy, M. B.	NAS 1-10492	2367
31	HARVARD UNIVERSITY	Rosendahl, J.	HQ-SC	Parkinson, W. H.	NSG 7304	2402
31	HARVARD UNIVERSITY	Murphy, R. E.	HQ-SL	Goody, R. M.	NGL 22-007-228	2381
31	HARVARD UNIVERSITY	Donn, B. D.	HQ-SL	Dennison, B. K.	NSG 7095	2400
31	HARVARD UNIVERSITY	Simon, N. K.	HQ-ST	McElroy, M. B.	NSG 2031	2387
31	HOUSTON BAPTIST UNIV	Henize, K. G.	JSC	Harvel, C. A.	NSG 9064	3395
31	JOHNS HOPKINS UNIV	Spencer, N. W.	GSFC	Doering, J. P.	NAS 5-11415	2250
31	KANSAS STATE UNIV	Salomonson, V. V.	GSFC	Kanemasu, E. T.	NSG 5101	2169
31	KANSAS STATE UNIV	Barnett, T. L.	JSC	Kanemasu, E. T.	NAS 9-14899	2167
31	KANSAS STATE UNIV	Murphy, R. E.	HQ-SL	Williams, D. B.	NGL 17-001-026	2168
31	MASS INST OF TECH	Poppoff, I. G.	ARC	Prinn, R. G.	NSG 2010	2491
31	MASS INST OF TECH	Poppoff, I. G.	ARC	Alyea, F.	NSG 2196	2497
31	MASS INST OF TECH	Theon, J. S.	GSFC	Staelin, D. H.	NAS 5-21980	2420
31	MASS INST OF TECH	Halem, M.	GSFC	Stone, P. H.	NGR 22-009-727	2465
31	MASS INST OF TECH	Hansen, J. E.	GSFC	Stone, P. H.	NSG 5113	2518
31	MASS INST OF TECH	Halem, M.	GSFC	Charney, J. G.	NSG 5166	2521
31	MASS INST OF TECH	Wexler, R.	GSFC	Austin, P. M.	NSG 5204	2522
31	MASS INST OF TECH	Eichelman, W. F.	JSC	Toksoz, M. N.	NAS 9-12334	2437
31	MASS INST OF TECH	McMaster, L. R.	LARC	Cunnold, D. M.	NAS 1-14932	2411
31	MASS INST OF TECH	Vitale, J. A.	HQ-ET	Gatos, H. C.	NSG 7331	2536
31	MASS INST OF TECH	Dwornik, S. E.	HQ-SL	Lewis, J. S.	NGL 22-009-521	2449
31	MOREHOUSE COLLEGE	Pohly, J. G.	HQ-LU	Hall, J.	NSG 7269	1969
31	NEW MEX ST U-LAS CR	Davis, W. G.	JSC	Golden, R. L.	NAS 9-15660	2816
31	NEW YORK UNIVERSITY	Halem, M.	GSFC	Isaacson, E.	NSG 5034	2937
31	NEW YORK UNIVERSITY	Halem, M.	GSFC	Hoffert, M. I.	NSG 5045	2938
31	NEW YORK UNIVERSITY	Halem, M.	GSFC	Isaacson, E.	NSG 5130	2939
31	OHIO STATE UNIV	Murphy, J. P.	HQ-ER	Mueller, I.	NASW 3194	3111
31	OHIO STATE UNIV	Simon, N. K.	HQ-ST	Seliga, T. A.	NASW 3149	3110
31	OLD DOMINION UNIV	Keating, G. M.	LARC	Goglia, G. L.	NSG 1028	3635
31	OLD DOMINION UNIV	Dodgen, J. A.	LARC	Kindle, E. C.	NSG 1131	3639
31	OLD DOMINION UNIV	McCormick, M. P.	LARC	Deepak, A.	NSG 1252	3645
31	OLD DOMINION UNIV	McMaster, L. R.	LARC	Chu, W. P.	NSG 1341	3652
31	OLD DOMINION UNIV	Reichle, H. G., Jr.	LARC	Kindle, E. C.	NSG 1394	3658
31	OLD DOMINION UNIV	Beck, S. M.	LARC	Kindle, E. C.	NSG 1395	3659
31	OLD DOMINION UNIV	Hoell, J. M.	LARC	Copeland, G. E.	NSG 1466	3664
31	OLD DOMINION UNIV	Suttles, J. T.	LARC	Tiwari, S. N.	NSG 1522	3676
31	OLD DOMINION UNIV	Vitale, J. A.	HQ-ET	Kindle, E. C.	NGL 47-003-067	3631
31	OREGON STATE UNIV	Hill, K.	MSFC	Barber, D. A.	NAS 8-32694	3192
31	PAN AMERICAN UNIV	Pohly, J. G.	HQ-LU	Glaser, F. M.	NSG 7298	3396
31	PENN STATE U-UNIV PK	Oseroff, H.	GSFC	Carlson, T. N.	NAS 5-24264	3242
31	PENN STATE U-UNIV PK	Adler, R. F.	GSFC	Anthes, R. A.	NSG 5205	3273
31	PENN STATE U-UNIV PK	Fichtl, G. H.	MSFC	Blackadar, A. K.	NAS 8-32046	3248
31	PENN STATE U-UNIV PK	Duke, J. R.	WFC	Olivero, J.	NAS 6-2726	3245
31	PENN STATE U-UNIV PK	Schmidlin, F. J.	WFC	Clark, J. H.	NAS 6-2818	3246
31	PENN STATE U-UNIV PK	Schmidlin, F. J.	WFC	Hale, L. C.	NAS 6-2826	3247
31	PENN STATE U-UNIV PK	Tilford, S. G.	HQ-ST	Hale, L. C.	NSG 7350	3279
31	POLY INST OF NY	Pirraglia, J. A.	GSFC	Gross, S. H.	NAS 5-24086	2942

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31	POLY INST OF NY	Pirraglia, J. A.	GSFC	Gross, S. H.	NAS 5-25076	2943
31	POLY INST OF NY	Spencer, N. W.	GSFC	Gross, S. H.	NSG 5284	2954
31	POLY INST OF NY	Murphy, R. E.	HQ-SL	Gross, S. H.	NGR 33-006-068	2945
31	RENSSELAER POLY-NY	Ramos, R.	ARC	Modestino, J. W.	NAS 2-10006	2957
31	RENSSELAER POLY-NY	Fellows, R. F.	HQ-SL	Harteck, P.	NGL 33-018-007	2967
31	RICE UNIVERSITY	Teegarden, B. J.	GSFC	Haymes, R. C.	NAS 5-25032	3403
31	RICE UNIVERSITY	Spencer, N. W.	GSFC	Reiff, P. H.	NSG 5286	3415
31	RICE UNIVERSITY	Arndt, G. D.	JSC	Gordon, W. E.	NAS 9-15212	3407
31	RICE UNIVERSITY	Quaide, W. L.	HQ-SL	Michel, F. C.	NSG 7032	3417
31	RICE UNIVERSITY	Fellows, R. F.	HQ-SL	Chamberlain, J. W.	NSG 7043	3418
31	RICE UNIVERSITY	Donn, B. D.	HQ-SL	Stebbings, R. F.	NSG 7386	3422
31	ST U NY COL-PURCHASE	Halem, M.	GSFC	Tenenbaum, J.	NSG 5077	3019
31	ST LOUIS UNIVERSITY	Hill, C. K.	MSFC	Fuelberg, H. E.	NAS 8-32838	2697
31	SAN DIEGO STATE UNIV	Levine, J. S.	LARC	Angione, R. J.	NSG 1430	1236
31	SAN JOSE STATE UNIV	Whitten, R. C.	ARC	Riegel, C. A.	NCA 2-675809	1254
31	SAN JOSE STATE UNIV	Whitten, R. C.	ARC	Riegel, C. A.	NSG 2130	1260
31	SAN JOSE STATE UNIV	Swan, P. R.	ARC	Bornstein, R. D.	NSG 2314	1277
31	SAN JOSE STATE UNIV	Woeller, F. H.	ARC	Mayer, L. A.	NSG 2315	1278
31	SO UNIV-BATON ROUGE	O'Neal, R. L.	LARC	Scott, R. L., Jr.	NAS 1-15335	2228
31	STANFORD UNIVERSITY	Halem, M.	GSFC	Spreiter, J. R.	NSG 5254	1379
31	STANFORD UNIVERSITY	Guynes, B. V.	MSFC	Darosa, A. V.	NAS 8-32852	1300
31	STANFORD UNIVERSITY	Murphy, R. E.	HQ-SL	Eshleman, V. R.	NGL 05-020-014	1320
31	STATE UNIV NY-ALBANY	Robbins, D. E.	JSC	Lala, G. G.	NAS 9-15538	2980
31	STATE UNIV NY-ALBANY	Holdeman, J. D.	LERC	Mohnen, V. A.	NSG 3138	2982
31	STATE UNIV NY-ALBANY	Clifton, K. S.	MSFC	Schuerman, D. W.	NAS 8-32485	2977
31	STATE UNIV NY-ALBANY	Donn, B. D.	HQ-SL	Weinberg, J. L.	NSG 7093	2984
31	STATE UNIV NY-ALBANY	Greenwood, L. R.	HQ-ST	Kiang, C. S.	NSG 7222	2985
31	STATE U NY-STONY BRK	Hansen, J. E.	GSFC	Owen, T.	NGR 33-015-165	3000
31	STATE U NY-STONY BRK	Stewart, R. W.	GSFC	Hogan, J.	NSG 5102	3005
31	STATE U NY-STONY BRK	Adler, R. F.	GSFC	Atlas, R. M.	NSG 5271	3008
31	STATE U NY-STONY BRK	Brunk, W. E.	HQ-SL	Varanasi, P.	NGR 33-015-139	2998
31	TENNESSEE TECH U	Humphries, W. R.	MSFC	Griggs, E. I.	NAS 8-31564	3340
31	TEXAS A&M UNIVERSITY	Schmugge, T. J.	GSFC	McFarland, M. J.	NSG 5193	3457
31	TEXAS A&M UNIVERSITY	Hill, C. K.	MSFC	Scoggins, J. R.	NAS 8-31773	3435
31	TEXAS A&M UNIVERSITY	Fellows, R. F.	HQ-SL	Plass, G. N.	NGR 44-001-117	3449
31	UNIV ALA-HUNTSVILLE	Smith, R. E.	MSFC	Hung, R. J.	NAS 8-31321	1051
31	UNIV ALASKA-FAIRBNKS	King, J.	HQ-ST	Akasofu, S. I.	NSG 7447	1075
31	UNIV OF ARIZONA	Hall, C. F.	ARC	Hunten, D. M.	NAS 2-9487	1097
31	UNIV OF ARIZONA	Donn, B. D.	GSFC	Martineck, S.	NCA 5-93	1108
31	UNIV OF ARIZONA	LeVine, D. M.	GSFC	Krider, E. P.	NSG 5023	1129
31	UNIV OF ARIZONA	Schmugge, T. J.	GSFC	Evans, D. D.	NSG 5279	1132
31	UNIV OF ARIZONA	Jafferis, W.	KSC	Krider, E. P.	NAS10-8518	1107
31	UNIV OF ARIZONA	McCormick, M. P.	LARC	Herman, B. M.	NAS 1-14332	1093
31	UNIV OF ARIZONA	McMaster, L. R.	LARC	Herman, B. M.	NAS 1-14928	1094
31	UNIV OF ARIZONA	Fellows, R. F.	HQ-SL	Hoenig, S. A.	NGL 03-002-019	1111
31	UNIV OF ARIZONA	Fellows, R. F.	HQ-SL	Smith, B.	NSG 7265	1148
31	UNIV ARKANSAS-FAYETV	Falls, L. W.	MSFC	Tubbs, J. D.	NAS 8-31550	1156
31	UNIV CALIF-BERKELEY	Pollack, J. B.	ARC	Cuzzi, J. N.	NCA 2-50802	1408
31	UNIV CALIF-BERKELEY	Fellows, R. F.	HQ-SL	Pimental, G. C.	NGL 05-003-286	1413
31	UNIV CALIF-BERKELEY	Smith, M. J.	HQ-SL	Lin, R. P.	NSG 7277	1450
31	UNIV CALIF-IRVINE	Newton, G. P.	HQ-ST	Molina, M. J.	NSG 7208	1464
31	UNIV CALIF-L ANGELES	Hall, C. F.	ARC	Russell, C. T.	NAS 2-9491	1469
31	UNIV CALIF-L ANGELES	Ehernberger, L. J.	DFRC	Wurtele, M. G.	NSG 4001	1501
31	UNIV CALIF-L ANGELES	Halem, M.	GSFC	Mintz, Y.	NGR 05-007-328	1486
31	UNIV CALIF-L ANGELES	Reed, E. I.	GSFC	Thorne, R. M.	NSG 5190	1508
31	UNIV CALIF-L ANGELES	Brunk, W. E.	HQ-SL	Schubert, G.	NSG 7164	1514
31	UNIV CALIF-L ANGELES	Donn, B. D.	HQ-SL	Aller, L. H.	NSG 7239	1516
31	UNIV CALIF-L ANGELES	Dwornik, S. E.	HQ-SL	Coleman, P. J., Jr.	NSG 7295	1519

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31	UNIV CALIF-SAN DIEGO	Wende, C. D.	GSFC	McIlwain, C. E.	NAS 5-23705	1531
31	UNIV CALIF-SAN DIEGO	Aucremanne, M. J.	HQ-SC	McIlwain, C. E.	NASW 2996	1538
31	UNIV OF CHICAGO	Wexler, R.	GSFC	Fujita, T. T.	NGR 14-001-008	2042
31	UNIV OF CHICAGO	Guynes, B. V.	MSFC	Meyer, P.	NAS 8-32828	2032
31	UNIV OF CHICAGO	Opp, A. G.	HQ-SC	Muller, D.	NSG 7464	2058
31	UNIV OF CHICAGO	Fellows, R. F.	HQ-SL	Kaplan, L. D.	NGR 14-001-194	2045
31	UNIV OF CHICAGO	Taylor, W. W.	HQ-ST	Simpson, J. A.	NSG 7288	2055
31	UNIV OF CHICAGO	Seals, R. K., Jr.	HQ-ST	Kaplan, L. D.	NSG 7356	2057
31	UNIV COLORADO-BOLDR	Rice, C. F.	GSFC	Stewart, A. I.	NAS 5-11405	1684
31	UNIV COLORADO-BOLDR	Gemmell, J. D.	GSFC	Barth, C. A.	NAS 5-22409	1685
31	UNIV COLORADO-BOLDR	Gustafson, C.	GSFC	Stewart, A. I.	NAS 5-23808	1689
31	UNIV COLORADO-BOLDR	Reber, C. A.	GSFC	London, J.	NSG 5153	1711
31	UNIV COLORADO-BOLDR	Brunk, W. E.	HQ-SL	Barth, C. A.	NGL 06-003-052	1694
31	UNIV COLORADO-BOLDR	Dwornik, S. E.	HQ-SL	Barth, C. A.	NGR 06-003-127	1698
31	UNIV COLORADO-BOLDR	Seals, R. K., Jr.	HQ-ST	Thomas, R. J.	NSG 7231	1721
31	UNIV OF CONNECTICUT	Halem, M.	GSFC	Bock, P.	NSG 5075	1755
31	UNIV OF DAYTON	Duke, J. R.	WFC	Luers, J. K.	NAS 6-2456	3152
31	UNIV OF DENVER	Kunde, V. G.	GSFC	Goldman, A.	NAS 5-25097	1734
31	UNIV OF DENVER	McMaster, L. R.	LARC	Murcray, D. G.	NAS 1-14929	1731
31	UNIV OF DENVER	McCormick, M. P.	LARC	Goldman, A.	NSG 1405	1743
31	UNIV OF DENVER	McCormick, M. P.	LARC	Murcray, D. G.	NSG 1439	1745
31	UNIV OF DENVER	McCormick, M. P.	LARC	Murcray, D. G.	NSG 1557	1746
31	UNIV OF DENVER	Newton, G. P.	HQ-ST	Fernald, F. G.	NSG 7271	1747
31	UNIV OF DENVER	Seals, R. K., Jr.	HQ-ST	Murcray, D. G.	NSG 7354	1748
31	UNIV OF FLORIDA	Wilhelmi, A. J.	ARC	Lanzerotti, L. J.	NAS 2-9976	1875
31	UNIV OF FLORIDA	Jafferis, W.	KSC	Uman, M. A.	NGR 10-005-169	1889
31	UNIV OF FLORIDA	Reichle, H. G., Jr.	LARC	Chameides, W. L.	NSG 1497	1892
31	UNIV OF FLORIDA	Donn, B. D.	HQ-SL	Green, A. S.	NGL 10-005-008	1885
31	UNIV OF HAWAII-MANOA	Theon, J. S.	GSFC	Ramage, C. S.	NSG 5159	1995
31	UNIV HOUSTON-HOUSTON	Morrison, D. A.	JSC	King, E. A.	NAS 9-15553	3475
31	UNIV HOUSTON-HOUSTON	Schmerling, E. R.	HQ-ST	Sheldon, W. R.	NGR 44-005-133	3479
31	UNIV HOUSTON-CL LAKE	Clark, J. H.	MSFC	Samfield, E.	DEN 8 1	3491
31	UNIV ILLINOIS-CHICGO	Pollack, J. B.	ARC	Krinsley, D.	NCA 2-330701	2060
31	UNIV ILLINOIS-URBANA	King, J.	HQ-ST	Unavailable	W-14133	2085
31	UNIV OF IOWA	Davis, M. A.	GSFC	Gurnett, D. A.	NAS 5-11431	2149
31	UNIV OF IOWA	Guynes, B. V.	MSFC	Shawhan, S. D.	NAS 8-32807	2155
31	UNIV OF KANSAS	Demel, K. J.	JSC	Ulaby, F. T.	NAS 9-15421	2174
31	UNIV OF KENTUCKY	Reichle, H. G., Jr.	LARC	Peters, L. K.	NSG 1424	2209
31	UNIV OF KENTUCKY	Reichle, H. G., Jr.	LARC	Peters, L. K.	NSG 1501	2210
31	UNIV MARYLAND-COL PK	Aikin, A. C.	GSFC	Wilkerson, T. W.	NAS 5-22537	2282
31	UNIV MARYLAND-COL PK	Findlay, J. A.	GSFC	Messenger, C. J.	NAS 5-22835	2283
31	UNIV MARYLAND-COL PK	Aikin, A. C.	GSFC	McIlrath, T. J.	NAS 5-24130	2286
31	UNIV MARYLAND-COL PK	Klinglesmith, D. A.	GSFC	Rosenfeld, A.	NCA 5-13	2292
31	UNIV MARYLAND-COL PK	Dennis, B. R.	GSFC	Rosenfeld, A.	NCA 5-79	2299
31	UNIV MARYLAND-COL PK	Bauer, S. J.	GSFC	Smith, E. P.	NGL 21-002-033	2301
31	UNIV MARYLAND-COL PK	Hartle, R. E.	GSFC	Matthews, D. L.	NGR 21-002-096	2305
31	UNIV MARYLAND-COL PK	Theon, J. S.	GSFC	Thompson, O. E.	NSG 5084	2325
31	UNIV MARYLAND-COL PK	Barnes, W. L.	GSFC	Wilkerson, T. D.	NSG 5174	2333
31	UNIV MARYLAND-COL PK	Arking, A.	GSFC	Thompson, O. E.	NSG 5209	2335
31	UNIV MARYLAND-COL PK	Winston, G. C.	GSFC	Currie, D. G.	NSG 5234	2336
31	UNIV MARYLAND-COL PK	Winston, G. C.	GSFC	Currie, D. G.	NSG 5287	2337
31	UNIV MARYLAND-COL PK	Browell, E. V.	LARC	Wilkerson, T. D.	NSG 1336	2317
31	UNIV MD-EASTRN SHORE	Parsons, C. L.	WFC	Smith, J. C.	NSG 6016	2354
31	UNIV OF MASS-AMHERST	Spence, D. C.	LARC	Wise, D. U.	NAS 1-15162	2548
31	UNIV OF MIAMI	Nelsen, E. D.	GSFC	Gordon, H. R.	NAS 5-22963	1902
31	UNIV OF MIAMI	Fowlis, W. W.	MSFC	Geisler, J. E.	NAS 8-32898	1903
31	UNIV MICH-ANN ARBOR	Hedin, A. E.	GSFC	Carignan, G. R.	NAS 5-11376	2569
31	UNIV MICH-ANN ARBOR	Spencer, N. W.	GSFC	Carignan, G. R.	NAS 5-11380	2570

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FIELD CODE	INSTITUTION	TECHNICAL OFFICER	TECH OFF LOC	FIRST PRINCIPAL INVESTIGATOR	GRANT/ CONTRACT NUMBER	ACC NO.
31	UNIV MICH-ANN ARBOR	Theon, J. S.	GSFC	Horvath, J. J.	NAS 5-20622	2571
31	UNIV MICH-ANN ARBOR	Cooley, J. E.	GSFC	Carignan, G. R.	NAS 5-20939	2572
31	UNIV MICH-ANN ARBOR	Krehbiel, J. F.	GSFC	Donahue, T. M.	NAS 5-22587	2573
31	UNIV MICH-ANN ARBOR	Gustafson, C.	GSFC	Hays, P. B.	NAS 5-23006	2575
31	UNIV MICH-ANN ARBOR	Spencer, N. W.	GSFC	Carignan, G. R.	NAS 5-23230	2576
31	UNIV MICH-ANN ARBOR	Wende, C. D.	GSFC	Walker, J. C.	NAS 5-24331	2580
31	UNIV MICH-ANN ARBOR	Spencer, N. W.	GSFC	Carignan, G. R.	NAS 5-25002	2582
31	UNIV MICH-ANN ARBOR	Spencer, N. W.	GSFC	Carignan, G. R.	NAS 5-25031	2583
31	UNIV MICH-ANN ARBOR	Niemann, H. B.	GSFC	Carignan, G. R.	NAS 5-25145	2585
31	UNIV MICH-ANN ARBOR	Niemann, H. B.	GSFC	Carignan, G. R.	NAS 5-25153	2586
31	UNIV MICH-ANN ARBOR	Stolarski, R. S.	GSFC	Rusch, D. W.	NSG 5171	2622
31	UNIV MICH-ANN ARBOR	Reed, E. I.	GSFC	Stedman, D. H.	NSG 5189	2623
31	UNIV MICH-ANN ARBOR	Spencer, N. W.	GSFC	Fontheim, E. G.	NSG 5281	2626
31	UNIV MICH-ANN ARBOR	Spencer, N. W.	GSFC	Nagy, A. F.	NSG 5282	2627
31	UNIV MICH-ANN ARBOR	Russell, J. M., III	LARC	Drayson, S. R.	NAS 1-14394	2565
31	UNIV MICH-ANN ARBOR	Pellett, G. L.	LARC	Dingle, A. N.	NSG 1243	2606
31	UNIV MICH-ANN ARBOR	Russell, J. M., III	LARC	Drayson, S. R.	NSG 1373	2609
31	UNIV MICH-ANN ARBOR	Smith, G. L.	LARC	Bartman, F. L.	NSG 1482	2611
31	UNIV MICH-ANN ARBOR	Rossi, L. C.	WFC	Horvath, J. J.	NAS 6-2794	2588
31	UNIV MICH-ANN ARBOR	Young, R. S.	HQ-SB	Kuhn, W. R.	NSG 7308	2631
31	UNIV MICH-ANN ARBOR	Fellows, R. F.	HQ-SL	Liu, W. C.	NGR 23-005-094	2600
31	UNIV MICH-ANN ARBOR	Donn, B. D.	HQ-SL	Bartman, F. L.	NGR 23-005-540	2605
31	UNIV MICH-ANN ARBOR	Fellows, R. F.	HQ-SL	Donahue, T. M.	NSG 7279	2630
31	UNIV MICH-ANN ARBOR	Dwornik, S. E.	HQ-SL	Atreya, S. K.	NSG 7404	2632
31	UNIV MICH-ANN ARBOR	Cauffman, D. P.	HQ-ST	Nagy, A. F.	NGR 23-005-015	2599
31	UNIV MICH-ANN ARBOR	Tilford, S. G.	HQ-ST	Donahue, T. M.	NSG 7209	2629
31	U MINN-MNPLS-ST PAUL	Thorley, G. W.	ARC	Nier, A. O.	NAS 2-8812	2639
31	U MINN-MNPLS-ST PAUL	Spencer, N. W.	GSFC	Nier, A. O.	NAS 5-11438	2641
31	U MINN-MNPLS-ST PAUL	Wende, C. D.	GSFC	Winckler, J. R.	NAS 5-23703	2643
31	U MINN-MNPLS-ST PAUL	Beswick, A. G.	LARC	Mauersberger, K.	NSG 1431	2654
31	U MINN-MNPLS-ST PAUL	Donn, B. D.	HQ-SL	Nier, A. O.	NGL 24-005-009	2647
31	U MINN-MNPLS-ST PAUL	Seals, R. K., Jr.	HQ-ST	Mauersberger, K.	NSG 7221	2666
31	UNIV MO-COLUMBIA	Curran, R. J.	GSFC	Schuster, B. G.	NAS 5-20818	2698
31	UNIV MO-COLUMBIA	Smith, R. E.	MSFC	Plummer, P. L.	NAS 8-31150	2699
31	UNIV MO-COLUMBIA	Smith, R. E.	MSFC	Kassner, J. L., Jr.	NAS 8-31849	2701
31	UNIV MO-ROLLA	Fallon, R. A.	MSFC	Hagen, D. E.	NAS 8-32976	2707
31	UNIV NEBRASKA-LINCLN	Fellows, R. F.	HQ-SL	Samson, J. A.	NGR 28-004-021	2737
31	UNIV NEVADA-DRI	Smith, R. E.	MSFC	Squires, P.	NAS 8-31470	2741
31	UNIV NEVADA-DRI	Schrick, B. J.	MSFC	Kocmond, W. C.	NAS 8-31776	2742
31	UNIV NEVADA-DRI	Fallon, R. A.	MSFC	Kocmond, W. C.	NAS 8-32975	2743
31	UNIV NEVADA-DRI	Fallon, R. A.	MSFC	Hallett, J.	NAS 8-32977	2744
31	UNIV OF NEVADA-RENO	Schrick, B. J.	MSFC	Kocmond, W. C.	NAS 8-32313	2747
31	UNIV NEW HAMP-DURHAM	Donley, J. L.	GSFC	Chupp, E. L.	NAS 5-23761	2753
31	UNIV NEW HAMP-DURHAM	Ballance, C. W., Jr.	WFC	Arnoldy, R. L.	NSG 6013	2759
31	UNIV OKLAHOMA-NORMAN	Turner, R. E.	MSFC	Inman, R. L.	NAS 8-31333	3183
31	UNIV OKLAHOMA-NORMAN	Camp, D. W.	MSFC	McCarthy, J.	NAS 8-31377	3184
31	UNIV OREGON-EUGENE	Tilford, S. G.	HQ-ST	Nolt, I. G.	NSG 7360	3204
31	UNIV OF PITTSBURGH	Fellows, R. F.	HQ-SL	Fite, W. L.	NGL 39-011-013	3292
31	UNIV OF PITTSBURGH	Donn, B. D.	HQ-SL	Zipf, E. C., Jr.	NGL 39-011-030	3293
31	UNIV OF PITTSBURGH	Fellows, R. F.	HQ-SL	Biondi, M. A.	NGR 39-011-137	3295
31	UNIV SO CAROLINA-COL	Fellows, R. F.	HQ-SL	Durig, J. R.	NGL 41-002-003	3322
31	UNIV OF SOUTHERN CAL	Brunk, W. E.	HQ-SL	Maxworthy, T.	NGR 05-018-178	1638
31	UNIV OF SOUTHERN CAL	Mitz, M. A.	HQ-SL	Judge, D. L.	NGR 05-018-180	1639
31	UNIV TENNESSEE-KNOXV	Kunde, V. G.	GSFC	Fox, K.	NAS 5-20672	3342
31	UNIV TENNESSEE-KNOXV	Hill, K.	MSFC	Frost, W.	NAS 8-31718	3347
31	UNIV TENNESSEE-KNOXV	Vaughan, O. H.	MSFC	Connell, J. R.	NAS 8-32031	3349
31	UNIV TENNESSEE-KNOXV	Fichtl, G. H.	MSFC	Frost, W.	NAS 8-32118	3350
31	UNIV TENNESSEE-KNOXV	Camp, D. W.	MSFC	Kohl, R. H.	NAS 8-32635	3353

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31	UNIV TENNESSEE-KNOXV	Camp, D. W.	MSFC	Frost, W.	NAS 8-32692	3354
31	UNIV TENNESSEE-KNOXV	Fellows, R. F.	HQ-SL	Gailar, N. M.	NGL 43-001-006	3358
31	UNIV TEXAS-AUSTIN	Spence, D. C.	LARC	Baker, V. R.	NAS 1-15164	3496
31	UNIV TEXAS-DALLAS	Hall, C. F.	ARC	Hoffman, J. H.	NAS 2-9485	3548
31	UNIV TEXAS-DALLAS	Spencer, N. W.	GSFC	Hoffman, J. H.	NAS 5-11406	3549
31	UNIV TEXAS-DALLAS	Spencer, N. W.	GSFC	Hanson, W. B.	NAS 5-11407	3550
31	UNIV TEXAS-DALLAS	Brace, L. H.	GSFC	Heikkik, W. J.	NSG 5085	3563
31	UNIV TEXAS-DALLAS	Brace, L. H.	GSFC	Hoffman, J. H.	NSG 5087	3564
31	UNIV TEXAS-DALLAS	Spencer, N. W.	GSFC	Klumpar, D. M.	NSG 5280	3565
31	UNIV TEXAS-DALLAS	Oran, W. A.	MSFC	Hoffman, J. H.	NAS 8-32689	3556
31	UNIV TEXAS-DALLAS	Murphy, R. E.	HQ-SL	Johnson, F. S.	NGL 44-004-026	3558
31	UNIV TEXAS-DALLAS	Quaide, W. L.	HQ-SL	Hodges, R. R., Jr.	NSG 7034	3568
31	UNIV TEXAS-DALLAS	King, J. H.	HQ-ST	Hanson, W. B.	NGR 44-004-120	3561
31	UNIV TEXAS-S ANTONIO	Chappell, C. R.	MSFC	Burch, J. L.	NAS 8-32584	3578
31	UNIV OF UTAH	Duke, J. R.	WFC	Kao, S. K.	NAS 6-2498	3584
31	UNIV OF UTAH	Duke, J. R.	WFC	Staffanson, F. L.	NAS 6-2627	3585
31	UNIV OF VIRGINIA	Spence, D. C.	LARC	Johnson, R. E.	NAS 1-15160	3684
31	UNIV OF WASHINGTON	Borucki, W. J.	ARC	Tillman, J. E.	NCA 2-850802	3764
31	UNIV OF WASHINGTON	Young, R. E.	ARC	Holton, J. R.	NSG 2228	3773
31	UNIV OF WASHINGTON	Eberstein, I.	GSFC	Leovy, C. B.	NSG 5039	3777
31	UNIV OF WASHINGTON	Spencer, N. W.	GSFC	Lin, C. S.	NSG 5283	3779
31	UNIV OF WASHINGTON	Harris, J. W.	JSC	Brownlee, D. E.	NSG 9052	3787
31	UNIV OF WASHINGTON	Williams, T. S., Jr.	LARC	Leovy, C. B.	NAS 1-9694	3756
31	UNIV OF WASHINGTON	Russell, J. M., III	LARC	Leovy, C. B.	NAS 1-14341	3757
31	UNIV OF WASHINGTON	Fallon, R. A.	MSFC	Hobbs, P. V.	NAS 8-33148	3760
31	UNIV OF WASHINGTON	Fellows, R. F.	HQ-SL	Leovy, C. B.	NSG 7085	3780
31	UNIV WISC-MADISON	Hall, C. F.	ARC	Suomi, V. E.	NAS 2-8813	3797
31	UNIV WISC-MADISON	Hall, C. F.	ARC	Suomi, V. E.	NAS 2-9480	3798
31	UNIV WISC-MADISON	Montgomery, H. E.	GSFC	Suomi, V. E.	NAS 5-21965	3800
31	UNIV WISC-MADISON	Gemmell, J. D.	GSFC	Kraushaar, W. L.	NAS 5-22410	3802
31	UNIV WISC-MADISON	Greaves, J. R.	GSFC	Suomi, V. E.	NAS 5-23462	3804
31	UNIV WISC-MADISON	Hasler, A. F.	GSFC	Suomi, V. E.	NAS 5-23706	3806
31	UNIV WISC-MADISON	Theon, J. S.	GSFC	Weinman, J. A.	NAS 5-24230	3807
31	UNIV WISC-MADISON	Greaves, J. R.	GSFC	Suomi, V. E.	NAS 5-25148	3810
31	UNIV WISC-MADISON	Halem, M.	GSFC	Suomi, V. E.	NGR 50-002-215	3820
31	UNIV WISC-MADISON	Theon, J. S.	GSFC	Suomi, V. E.	NSG 5126	3824
31	UNIV WISC-MADISON	Halem, M.	GSFC	Houghton, D. D.	NSG 5152	3825
31	UNIV WISC-MADISON	Halem, M.	GSFC	Herman, G. F.	NSG 5223	3828
31	UNIV WISC-MADISON	Minzner, R. A.	GSFC	Suomi, V. E.	NSG 5251	3831
31	UNIV WISC-MADISON	Halem, M.	GSFC	Horn, L. H.	NSG 5252	3832
31	UNIV WISC-MADISON	Northam, G. B.	LARC	Weinman, J. A.	NAS 1-14136	3796
31	UNIV WISC-MADISON	Murphy, R. E.	HQ-SL	Suomi, V. E.	NGR 50-002-189	3818
31	UNIV WISC-MADISON	Tilford, S. G.	HQ-ST	Suomi, V. E.	NSG 7390	3836
31	UNIV OF WYOMING	Hedgepeth, K. D.	LARC	Pepin, T. J.	NAS 1-13797	3839
31	UNIV OF WYOMING	McCormick, M. P.	LARC	Pepin, T. J.	NAS 1-14373	3840
31	UNIV OF WYOMING	McMaster, L. R.	LARC	Pepin, T. J.	NAS 1-14931	3841
31	UNIV OF WYOMING	McMaster, L. R.	LARC	Hofmann, D. J.	NAS 1-15377	3842
31	UNIV OF WYOMING	McCormick, M. P.	LARC	Pepin, T. J.	NSG 1518	3846
31	UNIV OF WYOMING	Schrick, B. J.	MSFC	Vali, G.	NAS 8-32067	3843
31	UNIV OF WYOMING	Fallon, R. A.	MSFC	Vali, G.	NAS 8-33150	3845
31	UNIV OF WYOMING	King, J., Jr.	HQ-ST	Hofmann, D. J.	NSG 7207	3848
31	UNIV OF WYOMING	Kakar, R. K.	HQ-ST	Hofmann, D. J.	NSG 7349	3849
31	UTAH STATE UNIV	Lowenstein, M.	ARC	Jeppesen, H.	NAS 2-9557	3593
31	UTAH STATE UNIV	Chappell, C. R.	MSFC	Raitt, W. J.	NAS 8-32636	3595
31	UTAH STATE UNIV	Tilford, S. G.	HQ-ST	Baker, K. D.	NSG 7210	3601
31	UTAH STATE UNIV	Kaiser, M. L.	HQ-ST	Banks, P. M.	NSG 7289	3602
31	UTAH STATE UNIV	Tilford, S. G.	HQ-ST	Megill, L. R.	NSG 7388	3603
31	VIRGINIA POLY INST	Carr, R. E.	WFC	Tieleman, H. W.	NGL 47-004-067	3716

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31	WASHINGTON ST UNIV	Tilford, S. G.	HQ-ST	Cronn, D.	NSG 7214	3790
31	YALE UNIVERSITY	Fellows, R. F.	HQ-SL	Cross, R. J., Jr.	NGL 07-004-043	1759
31	YORK UNIVERSITY	Cooper, D. M.	ARC	Nicholls, R. W.	NSG 7223	3854
31	YORK UNIVERSITY	Newton, G. P.	HQ-ST	Schiff, H. I.	NGR 52-134-005	3853
31	OREGON GRADUATE CTR	Newton, G. P.	HQ-ST	Rasmussen, R. A.	NSG 7457	3190
32	ARIZONA STATE UNIV	Pollack, J. B.	ARC	Krinsley, D.	NCA 2-35801	1082
32	ARIZONA STATE UNIV	Black, D. C.	ARC	Greeley, R.	NCA 2-35802	1083
32	ARIZONA STATE UNIV	Harris, J. W.	JSC	Buseck, P. R.	NSG 9068	1092
32	ARIZONA STATE UNIV	Young, R. S.	HQ-SB	Cronin, J. R.	NSG 7255	1089
32	ARIZONA STATE UNIV	French, B. M.	HQ-SL	Moore, C. B.	NGL 03-001-001	1084
32	ARIZONA STATE UNIV	French, B. M.	HQ-SL	Larimer, J. W.	NSG 7040	1088
32	ARIZONA STATE UNIV	Dwornik, S. E.	HQ-SL	Greeley, R.	NSG 7415	1090
32	ARIZONA STATE UNIV	Quaide, W. L.	HQ-SL	Greeley, R.	NSG 7429	1091
32	BOSTON UNIVERSITY	Young, R. S.	HQ-SB	Margulis, L.	NGR 22-004-025	2363
32	BROWN UNIVERSITY	Harris, J. W.	JSC	Rutherford, M. J.	NGR 40-002-123	3310
32	BROWN UNIVERSITY	Dwornik, S. E.	HQ-SL	Mutch, T. A.	NGR 40-002-088	3308
32	BROWN UNIVERSITY	Goldstein, B. E.	HQ-SL	Head, J. W.	NGR 40-002-116	3309
32	CALIF INST OF TECH	Allenby, R. J.	GSFC	Whitcomb, J. H.	NSG 5224	1198
32	CALIF INST OF TECH	Allenby, R. J.	GSFC	Melosh, H. J.	NSG 5267	1201
32	CALIF INST OF TECH	Quaide, W. L.	HQ-SL	Anderson, D. L.	NGL 05-002-069	1174
32	CALIF INST OF TECH	Quaide, W. L.	HQ-SL	Ahrens, T. J.	NGL 05-002-105	1175
32	CALIF INST OF TECH	Dwornik, S. E.	HQ-SL	Murray, B. C.	NGR 05-002-117	1183
32	CALIF INST OF TECH	Dwornik, S. E.	HQ-SL	Shoemaker, E. M.	NGR 05-002-303	1189
32	CALIF INST OF TECH	Fellows, R. F.	HQ-SL	Neugebauer, G.	NSG 7094	1203
32	CALIF INST OF TECH	Quaide, W. L.	HQ-SL	Ahrens, T. J.	NSG 7129	1205
32	CALIF INST OF TECH	Quaide, W. L.	HQ-SL	Burnett, D. S.	NSG 7202	1206
32	CALIF INST OF TECH	Quaide, W. L.	HQ-SL	Melosh, H. J.	NSG 7316	1208
32	CALIF INST OF TECH	Dwornik, S. E.	HQ-SL	Albee, A. L.	NSG 7442	1212
32	CAL STATE U-FULLERTN	French, B. M.	HQ-SL	Woolum, D. S.	NSG 7314	1220
32	CAL STATE U-HAYWARD	Pollock, G. E.	ARC	Warnke, D. A.	NCA 2-290704	1221
32	CHICAGO STATE UNIV	Bunch, T. E.	ARC	Methot, R. L.	NSG 2188	2007
32	CITY COLLEGE OF N Y	Rossi, L. C.	WFC	Pierson, W. J.	NAS 6-2439	2838
32	COLORADO STATE UNIV	Carpenter, L. H.	GSFC	Thompson, E. G.	NGR 06-002-191	1664
32	COLUMBIA UNIVERSITY	Allenby, R. J.	GSFC	Bilham, R. G.	NSG 5072	2872
32	COLUMBIA UNIVERSITY	Ungar, S. G.	GSFC	Webb, K. E.	NSG 5080	2874
32	COLUMBIA UNIVERSITY	Schnetzler, C. C.	GSFC	Kuo, J. T.	NSG 5222	2881
32	COLUMBIA UNIVERSITY	Smith, D. E.	GSFC	Talwani, M.	NSG 5273	2882
32	COLUMBIA UNIVERSITY	Stanley, H. R.	WFC	Talwani, M.	NAS 6-2519	2857
32	COLUMBIA UNIVERSITY	Quaide, W. L.	HQ-SL	Keihm, S. J.	NSG 7194	2885
32	COLUMBIA UNIVERSITY	French, B. M.	HQ-SL	O'Nions, R. K.	NSG 7200	2886
32	COLUMBIA UNIVERSITY	Quaide, W. L.	HQ-SL	Takahashi, T.	NSG 7434	2888
32	COLUMBIA UNIVERSITY	French, B. E.	HQ-SL	O'Nions, R. K.	NSG 7466	2889
32	CORNELL UNIVERSITY	Smith, D. E.	GSFC	Turcotte, D. L.	NSG 5060	2915
32	CORNELL UNIVERSITY	Quaide, W. L.	HQ-SL	Turcotte, D. L.	NGR 33-010-108	2901
32	CORNELL UNIVERSITY	Dwornik, S. E.	HQ-SL	Sagan, C. E.	NGR 33-010-220	2908
32	CORNELL UNIVERSITY	Dwornik, S. E.	HQ-SL	Veverka, J.	NSG 7156	2918
32	CORNELL UNIVERSITY	Kochendorfer, F. D.	HQ-SL	Harwit, M. O.	NSG 7268	2920
32	CORNELL UNIVERSITY	Goldstein, B. E.	HQ-SL	Gold, T.	NSG 7348	2922
32	FLORIDA STATE UNIV	Williams, T. S., Jr.	LARC	Hess, S. K.	NAS 1-9693	1862
32	GEORGIA INST OF TECH	Downs, S. W., Jr.	MSFC	Faust, C. E.	NAS 8-31990	1943
32	HARVARD UNIVERSITY	Young, R. S.	HQ-SB	Barghoorn, E. S.	NGL 22-007-069	2379
32	HARVARD UNIVERSITY	Dwornik, S. E.	HQ-SL	Cameron, A. G.	NGR 22-007-269	2384
32	HARVARD UNIVERSITY	Dwornik, S. E.	HQ-SL	Goody, R. M.	NSG 7398	2405
32	INDIANA U-BLOOMINGTN	McKay, D. S.	JSC	Basu, A.	NSG 9072	2094
32	INDIANA U-BLOOMINGTN	Young, R. S.	HQ-SB	Hayes, J. M.	NGR 15-003-118	2092
32	INDIANA U-BLOOMINGTN	Young, R. S.	HQ-SB	Ripley, E. M.	NSG 7389	2093
32	JOHNS HOPKINS UNIV	Smith, D. E.	GSFC	Marsh, B. D.	NSG 5090	2262
32	JOHNS HOPKINS UNIV	Langel, R. A.	GSFC	Marsh, B. D.	NSG 5269	2269

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32	LEHIGH UNIVERSITY	French, B. M.	HQ-SL	Goldstein, J. I.	NGR 39-007-043	3232
32	MASS INST OF TECH	Smith, D. E.	GSFC	Sclater, J. G.	NSG 5253	2523
32	MASS INST OF TECH	Frey, H. V.	GSFC	Molnar, P.	NSG 5260	2524
32	MASS INST OF TECH	Harris, J. W.	JSC	Brecher, A.	NSG 9057	2544
32	MASS INST OF TECH	Flinn, E. A.	HQ-ER	Soloman, S. C.	NSG 7329	2535
32	MASS INST OF TECH	Flinn, E. A.	HQ-ER	Counselman, C. C., III	NSG 7428	2540
32	MASS INST OF TECH	Kosofsky, L. J.	HQ-SL	Press, F.	NGL 22-009-187	2446
32	MASS INST OF TECH	Williams, R. J.	HQ-SL	McCord, T. B.	NGR 22-009-790	2471
32	MASS INST OF TECH	Quaide, W. L.	HQ-SL	Counselman, C. C., III	NSG 7010	2525
32	MASS INST OF TECH	Williams, R. J.	HQ-SL	McCord, T. B.	NSG 7048	2526
32	MASS INST OF TECH	Williams, R. J.	HQ-SL	Suomi, V. E.	NSG 7077	2527
32	MASS INST OF TECH	Quaide, W. L.	HQ-SL	Toksoz, M. N.	NSG 7081	2528
32	MASS INST OF TECH	Goldstein, B. E.	HQ-SL	Counselman, C. C., III	NSG 7118	2529
32	MASS INST OF TECH	Dwornik, S. E.	HQ-SL	McCord, T. B.	NSG 7273	2532
32	MASS INST OF TECH	Dwornik, S. E.	HQ-SL	Solomon, S. C.	NSG 7297	2533
32	MASS INST OF TECH	Quaide, W. L.	HQ-SL	Burns, R. G.	NSG 7338	2537
32	MASS INST OF TECH	Dwornik, S. E.	HQ-SL	Biemann, K.	NSG 7432	2541
32	MASS INST OF TECH	Dwornik, S. E.	HQ-SL	Solomon, S. C.	NSG 7438	2542
32	MASS INST OF TECH	Quaide, W.	HQ-SL	Pinson, W.	NSG 7467	2543
32	NEW MEX ST U-LAS CR	Krishen, K.	JSC	Carver, K. R.	NAS 9-15524	2815
32	NEW MEX ST U-LAS CR	Walsh, E. J.	WFC	Guard, K.	NAS 6-2795	2813
32	NEW MEX ST U-LAS CR	Krabill, W. B.	WFC	Guard, K.	NAS 6-2885	2814
32	NE LOUISIANA UNIV	Dwornik, S. E.	HQ-SL	DeHon, R. A.	NSG 7357	2226
32	NE LOUISIANA UNIV	Quaide, W. L.	HQ-SL	DeHon, R. A.	NSG 7420	2227
32	OHIO STATE UNIV	Marsh, J. G.	GSFC	Rapp, R. H.	NGR 36-008-161	3114
32	OHIO STATE UNIV	Smith, D. E.	GSFC	Mueller, I. I.	NSG 5265	3129
32	OHIO STATE UNIV	Kupperian, J. E., Jr.	GSFC	Schmidt, E. G.	NSG 5275	3130
32	OHIO STATE UNIV	Stanley, H. R.	WFC	Rapp, R. H.	NAS 6-2484	3109
32	OHIO STATE UNIV	Murphy, J. P.	HQ-ER	Mueller, I. I.	NGR 36-008-204	3115
32	OREGON STATE UNIV	Bryson, R. P.	HQ-SL	Schmitt, R. A.	NGL 38-002-020	3195
32	OREGON STATE UNIV	Dwornik, S. E.	HQ-SL	Komar, P. D.	NSG 7178	3199
32	PENN STATE U-UNIV PK	Allenby, R. J.	GSFC	Alexander, S. S.	NSG 5185	3272
32	PENN STATE U-UNIV PK	Allenby, R. J.	GSFC	Alexander, S. S.	NSG 5276	3275
32	PENN STATE U-UNIV PK	Quaide, W. L.	HQ-SL	Gold, D. P.	NGL 39-009-010	3254
32	PENN STATE U-UNIV PK	Goldstein, B. E.	HQ-SL	Muan, A.	NSG 7120	3277
32	PENN STATE U-UNIV PK	Goldstein, B. E.	HQ-SL	Alexander, S. S.	NSG 7193	3278
32	PENN STATE U-UNIV PK	Quaide, W.	HQ-SL	Eggler, D.	NSG 7465	3280
32	PRINCETON UNIVERSITY	Wilson, L.	GSFC	Jenkins, E. B.	NAS 5-22360	2766
32	PRINCETON UNIVERSITY	Quaide, W. L.	HQ-SL	Phinney, R. A.	NSG 7080	2792
32	PRINCETON UNIVERSITY	Dwornik, S. E.	HQ-SL	Smoluchowski, R.	NSG 7283	2795
32	PURDUE UNIVERSITY	Langel, R. A.	GSFC	Hinze, W. J.	NAS 5-22816	2096
32	PURDUE UNIVERSITY	Langel, R. A.	GSFC	Hinze, W. J.	NAS 5-25030	2098
32	PURDUE UNIVERSITY	French, B. M.	HQ-SL	Lipschutz, M. E.	NGL 15-005-140	2105
32	QUEENS COLLEGE	Quaide, W. L.	HQ-SL	Takahashi, T.	NSG 7321	2956
32	RICE UNIVERSITY	Meese, K. J.	GSFC	Anderson, H. R., Jr.	NAS 5-9317	3401
32	RICE UNIVERSITY	Harris, J. W.	JSC	Heymann, D.	NGL 44-006-127	3413
32	RICE UNIVERSITY	Quaide, W. L.	HQ-SL	Clayton, D. D.	NSG 7361	3420
32	RICE UNIVERSITY	Quaide, W. L.	HQ-SL	Debremaecker, J. C.	NSG 7362	3421
32	RICE UNIVERSITY	Quaide, W. L.	HQ-ST	Freeman, J. W., Jr.	NSG 7157	3419
32	RUTGERS U-N BRUNSWK	Harris, J. W.	JSC	Klein, L. C.	NSG 9065	2800
32	RUTGERS U-N BRUNSWK	French, B. M.	HQ-SL	Hewins, R. H.	NSG 7327	2799
32	ST MARY'S UNIV-SA	Horz, F.	JSC	Hanss, R. E.	NSG 9039	3424
32	SAN DIEGO STATE UNIV	Goldstein, B. E.	HQ-SL	Rehfuss, D. E.	NSG 7026	1237
32	SAN JOSE STATE UNIV	Blanchard, M. B.	ARC	Anderson, D. W.	NSG 2236	1267
32	SONOMA STATE COL	Bunch, T. E.	ARC	Vennum, W.	NCA 2-720701	1281
32	SO DAKOTA STATE UNIV	Downs, J.	JSC	Westin, F. C.	NAS 9-15345	3330
32	STANFORD UNIVERSITY	Broderick, J. C.	GSFC	Lyon, R. J.	NAS 5-24232	1291
32	STANFORD UNIVERSITY	Broderick, J. C.	GSFC	Rich, E. I.	NAS 5-24479	1294

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32	STANFORD UNIVERSITY	Dwornik, S. E.	HQ-SL	Howard, H. T.	NGR 05-020-649	1337
32	STANFORD UNIVERSITY	Goldstein, B. E.	HQ-SL	Tyler, G. L.	NSG 7029	1380
32	STANFORD UNIVERSITY	Williams, R. J.	HQ-SL	Nur, A. M.	NSG 7117	1383
32	STATE UNIV NY-ALBANY	Frey, H. V.	GSFC	Burke, K.	NSG 5274	2983
32	STATE UNIV NY-BUFFAL	Dwornik, S. E.	HQ-SL	King, J. S.	NGR 33-015-108	2991
32	STATE U NY-STONY BRK	Harris, J. W.	JSC	Hartung, J. B.	NSG 9013	3015
32	STATE U NY-STONY BRK	Williams, R. J.	HQ-SL	Papike, J. J.	NSG 7150	3010
32	STATE U NY-STONY BRK	Williams, R. J.	HQ-SL	Schaeffer, O. A.	NSG 7225	3011
32	TEXAS A&M UNIVERSITY	Chang, A. T.	GSFC	Blanchard, B. J.	NSG 5134	3455
32	TEXAS A&M UNIVERSITY	Chang, A. T.	GSFC	Blanchard, B. J.	NSG 5156	3456
32	TEXAS A&M UNIVERSITY	Demel, K. J.	JSC	Newton, R. R.	NAS 9-14875	3442
32	TEXAS A&M UNIVERSITY	Amsbury, D. M.	JSC	Harlan, J. C.	NAS 9-15465	3445
32	TEXAS A&M UNIVERSITY	Goldstein, B. E.	HQ-SL	Gangi, A. F.	NSG 7189	3460
32	TEXAS A&M UNIVERSITY	Murphy, R. E.	HQ-SL	Young, A. T.	NSG 7370	3461
32	TEXAS A&M UNIVERSITY	Quaide, W. L.	HQ-SL	Gangi, A. F.	NSG 7417	3462
32	UNIV ALA-HUNTSVILLE	Bensko, J.	MSFC	Doyle, L.	NAS 8-31345	1052
32	UNIV ALA-UNIVERSITY	Bensko, J.	MSFC	Stow, S. H.	NAS 8-29937	1064
32	UNIV OF ARIZONA	Young, R. S.	HQ-SB	Nagy, B.	NGR 03-002-171	1117
32	UNIV OF ARIZONA	Williams, R. J.	HQ-SL	Strom, R. G.	NGL 03-002-191	1114
32	UNIV OF ARIZONA	Dwornik, S. E.	HQ-SL	Sonett, C. P.	NGR 03-002-370	1121
32	UNIV OF ARIZONA	French, B. M.	HQ-SL	Wilkening, L. L.	NSG 7011	1134
32	UNIV OF ARIZONA	Quaide, W. L.	HQ-SL	Sonett, C. P.	NSG 7020	1135
32	UNIV OF ARIZONA	Dwornik, S. E.	HQ-SL	Strom, R. G.	NSG 7146	1142
32	UNIV OF ARIZONA	Quaide, W. L.	HQ-SL	Greenberg, R.	NSG 7201	1144
32	UNIV OF ARIZONA	French, B. M.	HQ-SL	Gehrels, A. M.	NSG 7246	1146
32	UNIV OF ARIZONA	French, B. M.	HQ-SL	Zellner, B. H.	NSG 7249	1147
32	UNIV OF ARIZONA	Quaide, W. L.	HQ-SL	Levy, E. H.	NSG 7419	1153
32	UNIV OF ARIZONA	French, B. M.	HQ-SL	Boynton, W. V.	NSG 7436	1154
32	UNIV CALIF-BERKELEY	Gallagher, W. F.	GSFC	Anderson, K. A.	NAS 5-22307	1389
32	UNIV CALIF-BERKELEY	Young, R. S.	HQ-SB	Calvin, M.	NGL 05-003-003	1410
32	UNIV CALIF-L ANGELES	Smith, D. E.	GSFC	Kaula, W. M.	NSG 5263	1509
32	UNIV CALIF-L ANGELES	Page, M. A.	MSFC	Coleman, P. J., Jr.	NAS 8-32571	1474
32	UNIV CALIF-L ANGELES	Murphy, J. P.	HQ-ER	Kaula, W. M.	NSG 7002	1511
32	UNIV CALIF-L ANGELES	Young, R. S.	HQ-SB	Kaplan, I. R.	NGR 05-007-221	1482
32	UNIV CALIF-L ANGELES	Young, R. S.	HQ-SB	Schopf, J. W.	NGR 05-007-407	1489
32	UNIV CALIF-L ANGELES	Quaide, W. L.	HQ-SL	Kaula, W. M.	NGL 05-007-002	1478
32	UNIV CALIF-L ANGELES	Dwornik, S. E.	HQ-SL	Schubert, G.	NGR 05-007-317	1485
32	UNIV CALIF-L ANGELES	French, B. M.	HQ-SL	Wasson, J. T.	NGR 05-007-329	1487
32	UNIV CALIF-L ANGELES	Quaide, W. L.	HQ-SL	Coleman, P. J., Jr.	NGR 05-007-351	1488
32	UNIV CALIF-L ANGELES	Quaide, W. L.	HQ-SL	Oertel, G.	NSG 7052	1512
32	UNIV CALIF-L ANGELES	Dwornik, S. E.	HQ-SL	Kieffer, H. H.	NSG 7282	1518
32	UNIV CALIF-L ANGELES	Quaide, W. L.	HQ-SL	Schubert, G.	NSG 7315	1520
32	UNIV CALIF-L ANGELES	French, B. M.	HQ-SL	Boynton, W. V.	NSG 7335	1521
32	UNIV CALIF-SAN DIEGO	Quaide, W. L.	HQ-SL	Arrhenius, G.	NGL 05-009-002	1542
32	UNIV CALIF-SAN DIEGO	French, B. M.	HQ-SL	Arnold, J. R.	NGL 05-009-004	1543
32	UNIV CALIF-SAN DIEGO	Quaide, W. L.	HQ-SL	Arnold, J. R.	NGR 05-005-005	1548
32	UNIV CALIF-SAN DIEGO	Quaide, W. L.	HQ-SL	Arnold, J. R.	NSG 7027	1566
32	UNIV CALIF-SAN DIEGO	Dwornik, S. E.	HQ-SL	Alfven, H.	NSG 7102	1568
32	UNIV CALIF-SAN DIEGO	French, B. M.	HQ-SL	MacDougall, J. D.	NSG 7121	1569
32	UNIV CALIF-SAN DIEGO	French, B. M.	HQ-SL	Rudee, M. L.	NSG 7474	1574
32	UNIV CALIF-SAN DIEGO	Dwornik, S. E.	HQ-SL	Alfven, H.	W-14108	1576
32	UNIV CALIF-S BARBARA	Salomonson, V. V.	GSFC	Ozier, J. D.	NSG 5155	1597
32	UNIV CALIF-S BARBARA	Chang, A. T.	GSFC	Estes, J. E.	NSG 5170	1598
32	UNIV CALIF-S BARBARA	Amsbury, D. L.	JSC	Strahler, A. H.	NAS 9-15509	1588
32	UNIV CALIF-S BARBARA	Harris, J. W.	JSC	Tilton, G. R.	NGR 05-010-081	1594
32	UNIV CALIF-S BARBARA	Prinkler, B.	HQ-EP	Unavailable	NASW 3118	1589
32	UNIV CALIF-S BARBARA	Dwornik, S. E.	HQ-SL	Peale, S. J.	NGR 05-010-062	1593
32	UNIV OF CHICAGO	French, B. M.	HQ-SL	Anders, E.	NGL 14-001-010	2037

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32	UNIV OF CHICAGO	Dwornik, S. E.	HQ-SL	Turkevich, A. L.	NGR 14-001-135	2043
32	UNIV OF CHICAGO	French, B. M.	HQ-SL	Grossman, L.	NGR 14-001-249	2049
32	UNIV OF CHICAGO	Quaide, W. L.	HQ-SL	Schramm, D. N.	NSG 7212	2054
32	UNIV COLORADO-BOLDR	Harris, J. W.	JSC	Spetzler, H. A.	NSG 9036	1730
32	UNIV COLORADO-BOLDR	Murphy, J. P.	HQ-ER	Wyss, M.	NASW 3103	1693
32	UNIV COLORADO-BOLDR	Flinn, E. A.	HQ-SL	Smith, M. L.	NSG 7319	1724
32	UNIV OF CONNECTICUT	Salomonson, V. V.	GSFC	Bock, P.	NSG 5179	1756
32	UNIV OF DAYTON	Quaide, W. L.	HQ-SL	Piekutowski, A. J.	NSG 7444	3155
32	UNIV OF GEORGIA	Boyce, J. M.	HQ-SL	Howard, J. H.	NGR 11-003-037	1981
32	UNIV OF GEORGIA	Dwornik, S. E.	HQ-SL	Wenner, D. B.	NSG 7433	1982
32	UNIV OF HAWAII-MANOA	Nava, D. F.	GSFC	Philpotts, J. A.	NSG 5203	1996
32	UNIV OF HAWAII-MANOA	Harris, J. W.	JSC	Philpotts, J. A.	NSG 9071	2006
32	UNIV OF HAWAII-MANOA	Finley, C. J.	HQ-SL	Jefferies, J. T.	NGR 12-001-127	1992
32	UNIV OF HAWAII-MANOA	Goldstein, B. E.	HQ-SL	McCord, T. B.	NSG 7312	2000
32	UNIV OF HAWAII-MANOA	Dwornik, S. E.	HQ-SL	Pilcher, C. B.	NSG 7403	2002
32	UNIV OF HAWAII-MANOA	Quaide, W. L.	HQ-SL	Russ, G. P.	NSG 7423	2003
32	UNIV OF HAWAII-MANOA	Dwornik, S. E.	HQ-SL	McCord, T. B.	NSG 7443	2004
32	UNIV OF HAWAII-MANOA	Quaide, W. L.	HQ-SL	Gaffey, M. J.	NSG 7462	2005
32	UNIV HOUSTON-HOUSTON	Young, R. S.	HQ-SB	Oro, J.	NGR 44-005-002	3477
32	UNIV HOUSTON-HOUSTON	Dwornik, S. E.	HQ-SL	King, E. A.	NSG 7228	3486
32	UNIV HOUSTON-HOUSTON	Dwornik, S. E.	HQ-SL	Smith, R. S.	NSG 7410	3488
32	UNIV OF KANSAS	Broderick, J. C.	GSFC	Haralick, R.	NAS 5-20943	2170
32	UNIV OF KANSAS	Eckerman, J.	GSFC	Moore, R. K.	NAS 5-22325	2171
32	UNIV OF KANSAS	Rayroe, R. G.	MSFC	Lien, Y. E.	NSG 8046	2199
32	UNIV OF KANSAS	Goldstein, B. E.	HQ-SL	VanSchmus, W. R.	NSG 7351	2198
32	UNIV MARYLAND-COL PK	Stief, L. J.	GSFC	Khanna, R. H.	NGR 21-002-368	2313
32	UNIV MARYLAND-COL PK	Rango, A.	GSFC	McCuen, R. H.	NGR 21-002-399	2314
32	UNIV MARYLAND-COL PK	Salomonson, V. V.	GSFC	Ragan, R. M.	NSG 5017	2320
32	UNIV MARYLAND-COL PK	Trombka, J. I.	GSFC	Balakrishnan, A. V.	NSG 5094	2326
32	UNIV MARYLAND-COL PK	Nava, D. F.	GSFC	Weidner, J. R.	NSG 5121	2328
32	UNIV MARYLAND-COL PK	Schmugge, T. J.	GSFC	Witczak, M. W.	NSG 5137	2331
32	UNIV MARYLAND-COL PK	Quaide, W. L.	HQ-SL	Adler, I.	NSG 7046	2340
32	UNIV MARYLAND-COL PK	Williams, R. J.	HQ-SL	Ponnamperuma, C. A.	NSG 7260	2344
32	UNIV MARYLAND-COL PK	Quaide, W. L.	HQ-SL	Pai, S. I.	NSG 7365	2349
32	UNIV OF MASS-AMHERST	Harris, J. W.	JSC	Rhodes, J. M.	NSG 9069	2556
32	UNIV OF MASS-AMHERST	Dwornik, S. E.	HQ-SL	McGill, G. E.	NGR 22-010-076	2553
32	UNIV OF MASS-AMHERST	Dwornik, S. E.	HQ-SL	Huguenin, R. L.	NSG 7405	2555
32	UNIV OF MIAMI	French, B. M.	HQ-SL	Fisher, D. E.	NSG 7245	1914
32	UNIV OF MIAMI	French, B. M.	HQ-SL	Fisher, D. E.	NSG 7309	1915
32	U MINN-MNPLS-ST PAUL	Harris, J. W.	JSC	Banerjee, S. K.	NGR 24-005-248	2652
32	U MINN-MNPLS-ST PAUL	Harris, J. W.	JSC	Weiblen, P. W.	NSG 9050	2670
32	UNIV MISS-UNIVERSITY	Paludan, C. T.	MSFC	Walsh, D. E.	NAS 8-32218	2692
32	UNIV OF NEW MEXICO	Goldstein, B. E.	HQ-SL	Elston, W. E.	NGL 32-004-011	2829
32	UNIV OF NEW MEXICO	French, B. M.	HQ-SL	Keil, K.	NGL 32-004-064	2831
32	UNIV OF NEW MEXICO	Dwornik, S. E.	HQ-SL	Elston, W. E.	NGR 32-004-062	2832
32	UNIV OREGON-EUGENE	Quaide, W. L.	HQ-SL	Weill, D. F.	NGR 38-003-020	3202
32	UNIV OF PITTSBURGH	Thomas, H. H.	GSFC	Lidiak, E. G.	NSG 5270	3303
32	UNIV OF PITTSBURGH	Quaide, W. L.	HQ-SL	Cassidy, W. A.	NGL 39-011-085	3294
32	UNIV OF RHODE ISLAND	Dwornik, S. E.	HQ-SL	Boothroyd, J. C.	NSG 7414	3315
32	UNIV OF SANTA CLARA	Reynolds, R. T.	ARC	Barker, W. A.	NCA 2-685701	1613
32	UNIV OF SANTA CLARA	Oberbeck, V. R.	ARC	Aggarwal, H. R.	NSG 2275	1627
32	UNIV OF SANTA CLARA	Koontz, O. L.	ARC	Greeley, R.	NSG 2286	1628
32	UNIV OF SANTA CLARA	Dwornik, S. E.	HQ-SL	Greeley, R.	NGR 05-017-037	1625
32	UNIV OF SANTA CLARA	Goldstein, B. E.	HQ-SL	Greeley, R.	NSG 7141	1629
32	UNIV OF SANTA CLARA	Quaide, W. L.	HQ-SL	Aggarwal, H. R.	NSG 7330	1630
32	UNIV SO CAROLINA-COL	Dwornik, S. E.	HQ-SL	Nummedal, D.	NSG 7076	3325
32	UNIV TENNESSEE-KNOXV	French, B. M.	HQ-SL	McSween, H. Y.	NSG 7413	3368
32	UNIV TEXAS-AUSTIN	Smith, D. E.	GSFC	Tapley, B. D.	NGR 44-012-283	3521

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32	UNIV TEXAS-AUSTIN	Harris, J. W.	JSC	Gose, W. A.	NSG 9021	3547
32	UNIV TEXAS-AUSTIN	Stanley, H. R.	WFC	Tapley, B. D.	NAS 6-2454	3499
32	UNIV TEXAS-AUSTIN	Flinn, E. A.	HQ-SL	Silverberg, E. C.	NGR 44-012-165	3516
32	UNIV TEXAS-AUSTIN	Young, R. S.	HQ-SL	Parker, P. L.	NGR 44-012-225	3518
32	UNIV TEXAS-AUSTIN	Smith, M. J.	HQ-SL	Muehlberger, W. R.	NSG 7250	3540
32	UNIV TEXAS-AUSTIN	Dwornik, S. E.	HQ-SL	Baker, V. R.	NSG 7326	3541
32	UNIV TEXAS-AUSTIN	Goldstein, B. E.	HQ-SL	Muehlberger, W. R.	NSG 7363	3543
32	UNIV TEXAS-GALVESTON	Quaide, W. L.	HQ-SL	Makamura, Y.	NSG 7418	3574
32	UNIV OF UTAH	Quaide, W. L.	HQ-SL	Shorthill, R. W.	NSG 7425	3592
32	UNIV OF VERMONT	Vitale, J. A.	HQ-ET	John, H. H.	NSG 7453	3605
32	UNIV OF VIRGINIA	Dwornik, S. E.	HQ-SL	Howard, A.	NGR 47-005-172	3690
32	UNIV OF WASHINGTON	Horz, F.	JSC	Brownlee, D. E.	NAS 9-13743	3762
32	UNIV OF WASHINGTON	Harris, J. W.	JSC	Adams, J. D.	NSG 9032	3786
32	UNIV OF WASHINGTON	Goldstein, B. E.	HQ-SL	Adams, J. B.	NSG 7173	3781
32	UNIV OF WASHINGTON	Quaide, W. L.	HQ-SL	Adams, J. B.	NSG 7174	3782
32	UNIV OF WASHINGTON	Quaide, W. L.	HQ-SL	McCallum, I. S.	NSG 7313	3783
32	UNIV OF WASHINGTON	Dwornik, S. E.	HQ-SL	Adams, J. B.	NSG 7448	3785
32	UNIV WISC-MADISON	Quaide, W. L.	HQ-SL	Taylor, J. W.	NSG 7215	3835
32	UNIV WISC-PARKSIDE	Dwornik, S. E.	HQ-SL	Smith, E. I.	NGR 50-009-001	3838
32	UTAH STATE UNIV	Young, R. S.	HQ-SB	Smith, G. G.	NSG 7038	3599
32	VA MILITARY INSTITUT	Goldstein, B. E.	HQ-SL	Schreiber, H. D.	NSG 7355	3707
32	WASHINGTON UNIVERSTY	Harris, J. W.	JSC	Haskin, L. A.	NSG 9055	2729
32	WASHINGTON UNIVERSTY	Quaide, W. L.	HQ-SL	Hohenberg, C. M.	NSG 7016	2725
32	WASHINGTON UNIVERSTY	Dwornik, S. E.	HQ-SL	Arvidson, R. E.	NSG 7087	2726
33	CITY COLLEGE OF N Y	Mueller, J. L.	GSFC	Pierson, W. J.	NAS 5-22392	2837
33	COLUMBIA UNIVERSITY	Stanley, H. R.	WFC	Kuo, J. T.	NAS 6-2455	2856
33	FLORIDA INST OF TECH	Nachtwey, D. S.	JSC	Wells, G. N.	NAS 9-15516	1858
33	HARVARD UNIVERSITY	Halem, M.	GSFC	Robinson, A. R.	NSG 5228	2396
33	HARVARD UNIVERSITY	King, J.	HQ-ST	McElroy, M. B.	NASW 2952	2377
33	JOHNS HOPKINS UNIV	Mueller, J. L.	GSFC	Phillips, O. M.	NSG 5161	2263
33	JOHNS HOPKINS UNIV	Smith, D. E.	GSFC	Marsh, B. D.	NSG 5225	2266
33	JOHNS HOPKINS UNIV	Stanley, H. R.	WFC	Phillips, O. M.	NAS 6-2706	2254
33	JOHNS HOPKINS UNIV	Huang, N. E.	WFC	Phillips, O. M.	NAS 6-2888	2255
33	NO CAROLINA STATE U	Stanley, H. R.	WFC	Long, S. R.	NAS 6-2617	3043
33	SAN JOSE STATE UNIV	Wrigley, R. C.	ARC	Broenkow, W. W.	NSG 2239	1268
33	TEXAS A&M UNIVERSITY	Huang, N. E.	WFC	Ichiye, T.	NAS 6-2884	3433
33	UNIV CALIF-BERKELEY	Kim, H. H.	GSFC	Colwell, R. N.	NSG 5256	1443
33	UNIV CALIF-L ANGELES	Stanley, H. R.	WFC	Kaula, W. M.	NAS 6-2463	1473
33	UNIV CALIF-SAN DIEGO	Salzman, J. A.	LERC	Austin, R. W.	NAS 3-21473	1528
33	UNIV CALIF-S BARBARA	Barnes, W.	GSFC	Estes, J. E.	NSG 5106	1596
33	UNIV OF DELAWARE	Huang, N. E.	WFC	Wu, J.	NAS 6-2820	1766
33	UNIV OF KANSAS	Schroeder, L. C.	LARC	Moore, R. K.	NSG 1397	2186
33	UNIV OF RHODE ISLAND	Campbell, J. W.	LARC	Cornillon, P. C.	NSG 1461	3313
33	UNIV OF RHODE ISLAND	Campbell, J. W.	LARC	Spaulding, M. L.	NSG 1495	3314
39	ADELPHI UNIVERSITY	Tarlton, M. J.	GSFC	Dooher, J. P.	NAS 5-23688	2834
39	ALABAMA A&M UNIV	Downs, S. W., Jr.	MSFC	Montgomery, O. L.	NSG 8062	1009
39	AUBURN UNIV-AUBURN	Huffman, J. D.	MSFC	Vachon, R. I.	NAS 8-32215	1022
39	BETHUNE-COOKMAN COL	Withrow, R. A.	KSC	Poonai, P.	NGR 10-022-001	1850
39	BOSTON COLLEGE	Taylor, W. W.	HQ-ST	Eather, R. H.	NSG 7385	2359
39	BOSTON COLLEGE	Tomayko, D. W.	HQ-ST	Carovillano, R. L.	NSG 7468	2360
39	CALIF INST OF TECH	Williams, T. S., Jr.	LARC	Anderson, D. L.	NAS 1-9703	1160
39	COLORADO STATE UNIV	Nelson, D.	GSFC	VonDerHaar, T. H.	NAS 5-22959	1651
39	COLORADO STATE UNIV	Tucker, C. J.	GSFC	Maxwell, E. L.	NAS 5-25081	1652
39	CORNELL UNIVERSITY	Vitale, J. A.	HQ-ET	Liang, T.	NGL 33-010-171	2897
39	DARTMOUTH COLLEGE	Jastrow, R.	GSFC	Fox, L.	NSG 5014	2750
39	DARTMOUTH COLLEGE	King, J. H.	HQ-ST	Sonnerup, B.	NSG 7292	2752
39	FLORIDA TECH UNIV	Buchanan, P.	KSC	Vickers, D. H.	NAS10-8986	1870
39	GEORGIA INST OF TECH	Paludan, C. T.	MSFC	Dees, J. W.	NAS 8-30653	1939

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39	GEORGIA INST OF TECH	Downs, S. W., Jr.	MSFC	Dees, J. W.	NAS 8-31850	1942
39	GEORGIA INST OF TECH	Downs, S. W., Jr.	MSFC	Shackelford, R. G.	NAS 8-32397	1944
39	HOWARD UNIVERSITY	Alterescu, S.	GSFC	Thorpe, A. M.	NAS 5-25185	1823
39	HOWARD UNIVERSITY	Pohly, J. G.	HQ-LU	Ferguson, G. A.	NGL 09-011-046	1826
39	JACKSON STATE UNIV	Wolverton, B. C.	NSTL	Shore, F.	NSG 8026	2675
39	JACKSON STATE UNIV	Joyce, A. T.	NSTL	Nelson, F. R.	NSG 9016	2676
39	KANSAS STATE UNIV	Barnett, T. L.	JSC	Feyerherm, A. M.	NAS 9-14533	2166
39	LA ST U&A&M COL-BRGE	Vitale, J. A.	HQ-ET	Whitehurst, C. A.	NGL 19-001-105	2224
39	MASS INST OF TECH	Williams, T. S., Jr.	LARC	Biemann, K.	NAS 1-9684	2408
39	MICHIGAN STATE UNIV	Vitale, J. A.	HQ-ET	Boylan, M. G.	NGL 23-004-083	2561
39	MISSISSIPPI STATE U	Vitale, J. A.	HQ-ET	Miller, W. F.	NGL 25-001-054	2683
39	NEW MEX ST U-LAS CR	Nitschke, H. A.	JSC	Henry, D. G.	NAS 9-95482	2817
39	NEW YORK UNIVERSITY	Halem, M.	GSFC	Hoffert, M. I.	NSG 5133	2940
39	OLD DOMINION UNIV	Johnson, R. W.	LARC	Kuo, C. Y.	NSG 1441	3660
39	OLD DOMINION UNIV	Browell, E. V.	LARC	Kindle, E. C.	NSG 1477	3666
39	OREGON STATE UNIV	Mueller, J.	GSFC	Zaneveld, R. V.	NAS 5-23738	3191
39	OREGON STATE UNIV	Vitale, J. A.	HQ-ET	Schrumpf, B. J.	NGL 38-002-053	3197
39	PAN AMERICAN UNIV	Heydorn, R. P.	JSC	Lemaster, E. W.	NSG 9033	3397
39	PENN STATE U-UNIV PK	Alford, W. L.	GSFC	McMurtry, G. J.	NAS 5-23859	3241
39	PRAIRIE VIEW A&M U	Browne, I. D.	JSC	Brams, E. A.	NSG 9006	3400
39	PURDUE UNIVERSITY	Grandfield, A. L.	JSC	Bauer, M. E.	NAS 9-15081	2101
39	PURDUE UNIVERSITY	Joosten, R. E.	JSC	Mroczynski, R.	NAS 9-15325	2102
39	PURDUE UNIVERSITY	Erickson, J. D.	JSC	Landgrebe, D. A.	NAS 9-15466	2103
39	PURDUE UNIVERSITY	Ansbury, D. L.	JSC	Hoffer, R. M.	NAS 9-15508	2104
39	PURDUE UNIVERSITY	Maurer, H. E.	WFC	Phillips, T. L.	NAS 6-2695	2099
39	PURDUE UNIVERSITY	Vitale, J. A.	HQ-ET	Weismiller, R. A.	NGL 15-005-186	2106
39	SAN JOSE STATE UNIV	Nishioka, K.	ARC	Ling, A. C.	NSG 2305	1275
39	SAVANNAH STATE COL	Perkins, E. E.	KSC	Ghuman, G. S.	NSG 803	1977
39	SO DAKOTA STATE UNIV	Schmugge, T. J.	GSFC	Myers, V. I.	NAS 5-24358	3329
39	SO DAKOTA STATE UNIV	Vitale, J. A.	HQ-ET	Myers, V. I.	NGL 42-003-007	3331
39	STANFORD UNIVERSITY	Schmitz, F. H.	ARC	Karamcheti, K.	NSG 2254	1363
39	STANFORD UNIVERSITY	Roberson, F. I.	HQ-ET	McAlister, J. F.	NASW 3204	1304
39	STATE UNIV NY-ALBANY	Weinberg, I.	LERC	Corbett, J. W.	NSG 3095	2981
39	STATE UNIV NY-ALBANY	Vaughn, O. H., Jr.	MSFC	Vonnegut, B.	NAS 8-32893	2978
39	STATE U NY-STONY BRK	Williams, T. S., Jr.	LARC	Owens, T.	NAS 1-10493	2993
39	TEXAS A&M UNIVERSITY	Chang, A. T.	GSFC	Blanchard, B. J.	NAS 5-25144	3432
39	TEXAS A&M UNIVERSITY	Wang, J. R.	GSFC	Newton, R. W.	NSG 5266	3458
39	TEXAS A&M UNIVERSITY	Buras, N. T.	JSC	Rouse, J. W., Jr.	NAS 9-13904	3439
39	TEXAS A&M UNIVERSITY	Blanchard, D. P.	JSC	Randall, J. D.	NAS 9-14828	3441
39	TEXAS A&M UNIVERSITY	Vitale, J. A.	HQ-ET	Blanchard, B. J.	NGL 44-001-001	3448
39	UNIV ALA-HUNTSVILLE	West, G. S., Jr.	MSFC	Hung, R. J.	NAS 8-31171	1049
39	UNIV ALASKA-FAIRBNKS	Vitale, J. A.	HQ-ET	Miller, J. M.	NGL 02-001-092	1071
39	UNIV ALASKA-FAIRBNKS	Taylor, W. W.	HQ-ST	Akasofu, S. I.	NSG 7281	1074
39	UNIV OF ARIZONA	Vitale, J. A.	HQ-ET	Johnson, J. D.	NGL 03-002-313	1115
39	UNIV CALIF-BERKELEY	Linlor, W. I.	ARC	Angelakos, D. J.	NCA 2-50704	1403
39	UNIV CALIF-BERKELEY	Bauer, E.	ARC	Colwell, R. N.	NSG 2207	1433
39	UNIV CALIF-BERKELEY	Garcia, J. G.	JSC	Colwell, R. N.	NAS 9-14565	1401
39	UNIV CALIF-BERKELEY	Vitale, J. A.	HQ-ET	Colwell, R. N.	NGL 05-003-404	1414
39	UNIV CALIF-BERKELEY	Vitale, J. A.	HQ-ET	Colwell, R. N.	NSG 7220	1448
39	UNIV CALIF-BERKELEY	Quaide, W. L.	HQ-SL	Anderson, K. A.	NSG 7127	1445
39	UNIV CALIF-DAVIS	Rango, A.	GSFC	Algazi, V. R.	NSG 5092	1462
39	UNIV CALIF-L ANGELES	Wende, C. D.	GSFC	Coleman, P. J., Jr.	NAS 5-23702	1471
39	UNIV CALIF-L ANGELES	Cauffman, D. P.	HQ-ST	Coleman, P. J., Jr.	NGL 05-007-004	1479
39	UNIV CALIF-L ANGELES	King, J. H.	HQ-ST	Siscoe, G. L.	NSG 7180	1515
39	UNIV CALIF-L ANGELES	Taylor, W. W.	HQ-ST	Coleman, P. J., Jr.	NSG 7276	1517
39	UNIV CALIF-SAN DIEGO	Lawson, D. E.	GSFC	Berger, J.	NGR 05-009-246	1556
39	UNIV CALIF-SAN DIEGO	Purvis, C. K.	LERC	Whipple, E. C., Jr.	NSG 3150	1564
39	UNIV CALIF-S BARBARA	Briggs, B. R.	ARC	Estes, J. E.	NCA 2-680803	1591

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39	UNIV CALIF-S BARBARA	Rango, A.	GSFC	Dozier, J.	NSG 5262	1599
39	UNIV COLORADO-BOLDR	Jones, C. T.	MSFC	Hart, J. E.	NAS 8-31958	1690
39	UNIV COLORADO-BOLDR	Vitale, J. A.	HQ-ET	Ives, J. D.	NGL 06-003-200	1696
39	UNIV DC-HARVARD GA	Westrom, J. L.	GSFC	Walker, E. L.	NGR 09-053-003	1842
39	UNIV DC-MT VERNON SQ	Nava, D. F.	GSFC	Wyche, G.	NGR 09-050-019	1844
39	UNIV OF DAYTON	Stevenson, S. M.	LERC	Martino, J. P.	NAS 3-20365	3147
39	UNIV OF DELAWARE	Bowker, D. E.	LARC	Klemas, V.	NSG 1398	1768
39	UNIV OF DELAWARE	Bowker, D. E.	LARC	Klemas, V.	NSG 1433	1770
39	UNIV OF DENVER	Orr, H. D.	LARC	Murcray, D. G.	NSG 1432	1744
39	UNIV OF FLORIDA	Pope, C. D.	KSC	Sutherland, R.	NAS10-8920	1880
39	UNIV OF FLORIDA	Pope, C. D.	KSC	Bartholic, J. F.	NAS10-9168	1881
39	UNIV OF FLORIDA	Davis, T. C., Jr.	KSC	Bartholic, J. F.	NAS10-9348	1882
39	UNIV OF FLORIDA	Horne, F. W., Jr.	KSC	Blasquez, C. H.	NAS10-9471	1884
39	UNIV OF FLORIDA	Vitale, J. A.	HQ-ET	Ruth, B. E.	NSG 7236	1900
39	UNIV HOUSTON-HOUSTON	Browne, I. D.	JSC	Decell, H. P., Jr.	NAS 9-15543	3474
39	UNIV HOUSTON-HOUSTON	Williams, T. S., Jr.	LARC	Oro, J.	NAS 1-9685	3466
39	UNIV OF KANSAS	Demel, K. J.	JSC	Ulaby, F. T.	NAS 9-14052	2173
39	UNIV OF KANSAS	Matthews, R. E.	JSC	Holtzman, J. C.	NAS 9-15602	2175
39	UNIV OF KANSAS	Pritchard, E. B.	LARC	Lenzen, K. H.	NSG 1533	2187
39	UNIV OF KANSAS	Vitale, J. A.	HQ-ET	Barr, B. G.	NGL 17-004-024	2178
39	UNIV MARYLAND-COL PK	Trombka, J. I.	GSFC	Sommer, S. E.	NAS 5-23457	2285
39	UNIV MARYLAND-COL PK	Browell, E. V.	LARC	Wilkerson, T. D.	NAS 1-15378	2279
39	UNIV OF MIAMI	Bland, R. A.	KSC	Lee, S. S.	NAS10-8926	1905
39	UNIV OF MIAMI	Bland, R. A.	KSC	Hirschberg, J. G.	NAS10-8954	1906
39	UNIV OF MIAMI	Bland, R. A.	KSC	Lee, S. S.	NAS10-9005	1907
39	UNIV MICH-ANN ARBOR	Ruff, R. C.	MSFC	Carignan, G. R.	NAS 8-32661	2592
39	U MINN-MNPLS-ST PAUL	Vitale, J. A.	HQ-ET	Shepherd, W. G.	NGL 24-005-263	2649
39	U MINN-MNPLS-ST PAUL	King, J. H.	HQ-ST	Winckler, J. R.	NSG 7005	2664
39	UNIV MO-COLUMBIA	Paludan, C. T.	MSFC	Hadlock, F. O.	NAS 8-31767	2700
39	UNIV OF MONTANA	Oseroff, H.	GSFC	Craighead, J. J.	NAS 5-23891	2733
39	UNIV NEBRASKA-LINCLN	Vitale, J. A.	HQ-ET	Carlson, M. P.	NGL 28-004-020	2736
39	UNIV SO CAROLINA-COL	Katzberg, S. J.	LARC	Zingmark, R. G.	NSG 1334	3323
39	UNIV SO CAROLINA-COL	Jobson, D. J.	LARC	Zingmark, R. G.	NSG 1523	3324
39	UNIV SO MISSISSIPPI	Wolverton, B. C.	NSTL	Stocks, P. K.	NAS13-81	2694
39	UNIV TENNESSEE-KNOXV	Golden, T. S.	GSFC	Snyder, W. M.	NAS 5-25101	3344
39	UNIV TENNESSEE-KNOXV	Paludan, C. T.	MSFC	Shahroki, F.	NAS 8-31980	3348
39	UNIV TENNESSEE-KNOXV	Anderson, B. J.	MSFC	Carter, J. M.	NAS 8-32611	3352
39	UNIV OF UTAH	Vitale, J. A.	HQ-ET	Ridd, M. K.	NSG 7226	3591
39	UNIV OF VIRGINIA	Oseroff, H.	GSFC	Dolan, R.	NAS 5-20999	3685
39	UNIV WISC-MADISON	Vitale, J. A.	HQ-ET	Clapp, J. L.	NGL 50-002-127	3815
39	VIRGINIA POLY INST	Scott, J. H.	WFC	Powell, N. L.	NAS 6-2388	3713
39	WASHINGTON UNIVERSTY	Williams, T. S., Jr.	LARC	Arvidson, R. E.	NAS 1-13889	2717
39	WASHINGTON UNIVERSTY	Daniels, J. L., Jr.	MSFC	Eastwood, L.	NAS 8-32354	2719
39	WESTERN WASHINGTON U	Briggs, B. R.	ARC	Peterson, G.	NCA 2-862801	3791
39	XAVIER UNIV-LA	Espy, P. N.	MSFC	Ioup, J.	NSG 8050	2242
41	ARIZONA STATE UNIV	Hippensteele, S. A.	LERC	Metzger, D. E.	NSG 3075	1086
41	AUBURN UNIV-AUBURN	Shackelford, B. W., Jr.	MSFC	Sforzini, R. H.	NCA 8-130	1028
41	BOSTON UNIVERSITY	Yates, E. C., Jr.	LARC	Morino, L.	NGR 22-004-030	2364
41	CALIF INST OF TECH	Davis, R. C.	LARC	Babcock, C. D., Jr.	NSG 1005	1192
41	CALIF INST OF TECH	Starnes, J. H.	LARC	Knauss, W. G.	NSG 1483	1193
41	CAL POLY ST U-S LUIS	Banner, R. D.	DFRC	Sandlin, D. R.	NSG 4014	1215
41	CASE WESTERN RESERVE	Bishop, A. R.	LERC	Reshotko, E.	NGR 36-027-064	3070
41	CASE WESTERN RESERVE	Bober, L. J.	LERC	Reshotko, E.	NSG 3058	3074
41	CASE WESTERN RESERVE	Sockol, P. M.	LERC	Reshotko, E.	NSG 3062	3075
41	CASE WESTERN RESERVE	Anderson, B. H.	LERC	Lynch, W. C.	NSG 3115	3079
41	CASE WESTERN RESERVE	Riddlebaugh, S. M.	LERC	Greber, I.	NSG 3206	3087
41	CASE WESTERN RESERVE	Anderson, B. H.	LERC	Parke, F. I.	NSG 3207	3088
41	CASE WESTERN RESERVE	Hingst, W. R.	LERC	Greber, I.	NSG 3211	3089

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41	CATHOLIC UNIVERSITY	Deissler, R. G.	LERC	Ling, S. C.	NGR 09-005-099	1779
41	CHRISTPHR NEWPRT COL	Morris, G. J.	LARC	Roby, A. B.	NAS 1-14034	3606
41	CITY COLLEGE OF N Y	Montgomery, R. C.	LARC	Mekel, R.	NSG 1169	2842
41	CLEMSON UNIV-CLEMSON	Doggett, R. V., Jr.	LARC	Rudisill, C. S.	NSG 1411	3318
41	CLEVELAND STATE UNIV	Dunning, R. S.	LARC	Chukwu, E. N.	NSG 1445	3096
41	COLORADO STATE UNIV	Sockol, P. M.	LERC	Sadeh, W. Z.	NSG 3127	1672
41	COLUMBIA UNIVERSITY	Mixson, J. S.	LARC	Vaicaitis, R.	NSG 1450	2868
41	COLUMBIA UNIVERSITY	Harris, R. L., Sr.	LARC	Galanter, E.	NSG 1541	2869
41	CORNELL UNIVERSITY	Yu, Y. H.	ARC	George, A. R.	NSG 2331	2913
41	CORNELL UNIVERSITY	Marek, C. J.	LERC	Gouldin, F. C.	NSG 3019	2914
41	DREXEL UNIVERSITY	Price, D. B.	LARC	Calise, A. J.	NSG 1496	3217
41	FLORIDA TECH UNIV	Berry, D. T.	DFRC	Rapson, R. C.	NSG 4016	1872
41	GEORGE WASHINGTON U	Duberg, J. E.	LARC	Liebowitz, H.	NAS 1-14605	1784
41	GEORGE WASHINGTON U	Margolis, K.	LARC	Liebowitz, H.	NGR 09-010-064	1791
41	GEORGE WASHINGTON U	Bobbitt, P. J.	LARC	Liebowitz, H.	NGR 09-010-074	1792
41	GEORGE WASHINGTON U	Anderson, R. A.	LARC	Liebowitz, H.	NGR 09-010-078	1793
41	GEORGE WASHINGTON U	Margolis, K.	LARC	Liebowitz, H.	NGR 09-010-085	1794
41	GEORGE WASHINGTON U	Suit, W. T.	LARC	Liebowitz, H.	NSG 1161	1799
41	GEORGE WASHINGTON U	Migneault, G. E.	LARC	Gross, D.	NSG 1338	1803
41	GEORGE WASHINGTON U	Reed, W. H., III	LARC	Liebowitz, H.	NSG 1438	1805
41	GEORGIA INST OF TECH	Young, W. H., Jr.	LARC	Gray, R. B.	NAS 1-15158	1933
41	GEORGIA INST OF TECH	Baumeister, K. J.	LERC	Zinn, B. T.	NSG 3036	1958
41	HAMPTON INSTITUTE	Jewell, J. W., Jr.	LARC	Williams, G. K.	NAS 1-14507	3620
41	HAMPTON INSTITUTE	Knox, C. E.	LARC	Hargrove, A.	NAS 1-15445	3622
41	HAMPTON INSTITUTE	Bushnell, D. M.	LARC	Anyiwo, J. C.	NSG 1456	3625
41	HAMPTON INSTITUTE	Beckwith, I. E.	LARC	Anyiwo, J. C.	NSG 1505	3627
41	HARVARD UNIVERSITY	Doolin, B. F.	ARC	Brockett, R. W.	NSG 2265	2389
41	HARVEY MUDD COLLEGE	Luebs, A. B.	ARC	Williams, H.	NCA 2-283801	1232
41	HOWARD UNIVERSITY	Barrowman, J. S.	GSFC	Fan, D. N.	NAS 5-24242	1820
41	ILL INST OF TECH	Adelman, H. M.	LARC	Haftka, R. T.	NSG 1266	2009
41	ILL INST OF TECH	Harvey, W. D.	LARC	Nagib, H. M.	NSG 1451	2010
41	ILL INST OF TECH	Groeneweg, J. F.	LERC	Nagib, H. M.	NSG 3220	2012
41	IND U-PURDUE-INDAPLS	Sockol, P. M.	LERC	Bodonyi, R. J.	NSG 3183	2095
41	IOWA STATE UNIV	Rakich, J. V.	ARC	Tannehill, J. C.	NGR 16-002-038	2135
41	IOWA STATE UNIV	Rossow, V. J.	ARC	Iversen, J. D.	NSG 2040	2140
41	IOWA STATE UNIV	Malcolm, G. N.	ARC	James, W. D.	NSG 2091	2141
41	IOWA STATE UNIV	Olson, L. E.	ARC	James, W. D.	NSG 2257	2142
41	IOWA STATE UNIV	Sobieski, J.	LARC	Pierson, B. L.	NSG 1530	2137
41	IOWA STATE UNIV	Salas, M. D.	LARC	Anderson, D. A.	NSG 1535	2138
41	IOWA STATE UNIV	Sockol, P. M.	LERC	Serovy, G. K.	NSG 3033	2143
41	ISRAEL INST OF TECH	Abel, I.	LARC	Nissim, E.	NSG 7072	3857
41	ISRAEL INST OF TECH	Bush, H. G.	LARC	Weller, T.	NSG 7083	3858
41	ISRAEL INST OF TECH	Abel, I.	LARC	Nissim, E.	NSG 7373	3860
41	JOHNS HOPKINS UNIV	Rubesin, M. W.	ARC	Corrsin, S.	NSG 2303	2260
41	LEHIGH UNIVERSITY	Batterton, P. G.	LERC	Rockwell, D. O.	NSG 3162	3236
41	MASS INST OF TECH	Johnson, W. R.	ARC	Widnall, S. E.	NSG 2142	2494
41	MASS INST OF TECH	Johnson, W. R.	ARC	Ham, N. D.	NSG 2266	2500
41	MASS INST OF TECH	Heath, D. F.	GSFC	Cunnold, D. M.	NAS 5-22915	2421
41	MASS INST OF TECH	Gloersen, P.	GSFC	Staelin, D. H.	NAS 5-22929	2422
41	MASS INST OF TECH	Hubbard, H. H.	LARC	Ingard, K. V.	NAS 1-15154	2412
41	MASS INST OF TECH	Maddalon, D. V.	LARC	Taneja, N. K.	NAS 1-15268	2413
41	MASS INST OF TECH	Reid, H. J., Jr.	LARC	Simpson, R. W.	NGL 22-009-640	2451
41	MASS INST OF TECH	Queijo, M. J.	LARC	Young, L. R.	NGR 22-009-701	2463
41	MASS INST OF TECH	Rhodes, M. D.	LARC	Mar, J. W.	NGR 22-009-781	2470
41	MASS INST OF TECH	Hoad, D. R.	LARC	Widnall, S. E.	NGR 22-009-818	2473
41	MASS INST OF TECH	Bland, S. R.	LARC	Harris, W. L.	NSG 1219	2478
41	MASS INST OF TECH	Boyden, R. P.	LARC	Covert, E. E.	NSG 1356	2483
41	MASS INST OF TECH	Hefner, J. N.	LARC	Melcher, J. R.	NSG 1453	2486

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41	MASS INST OF TECH	Boyden, R. P.	LARC	Covert, E. E.	NSG 1502	2487
41	MASS INST OF TECH	Crouse, J. E.	LERC	Thompkins, W. T., Jr.	NAS 3-20473	2417
41	MASS INST OF TECH	McNally, W. D.	LERC	Kerrebrock, J. L.	NGL 22-009-383	2448
41	MASS INST OF TECH	Holms, A. G.	LERC	Witmer, E. A.	NGR 22-009-339	2454
41	MASS INST OF TECH	Brabbs, T. A.	LERC	Hoult, D. P.	NSG 3076	2508
41	MASS INST OF TECH	Adamczyk, J. J.	LERC	Kerrebrock, J. L.	NSG 3079	2509
41	MASS INST OF TECH	Baumeister, K. J.	LERC	Ungard, K. U.	NSG 3129	2512
41	MASS INST OF TECH	Adamczyk, J. J.	LERC	Greitzer, E. M.	NSG 3208	2515
41	MICHIGAN STATE UNIV	Hardin, J. C.	LARC	Marx, G.	NGR 23-004-091	2562
41	MISSISSIPPI STATE U	South, J. C., Jr.	LARC	Thompson, J. F.	NGR 25-001-055	2684
41	MISSISSIPPI STATE U	Hall, A. W.	LARC	Cross, E. J., Jr.	NSG 1083	2685
41	MISSISSIPPI STATE U	Stewart, E. C.	LARC	Bennett, A. G., Jr.	NSG 1249	2686
41	MISSISSIPPI STATE U	McLemore, H. C.	LARC	Cross, E. J., Jr.	NSG 1402	2688
41	MISSISSIPPI STATE U	Judd, J. H.	LARC	Cross, E. J., Jr.	NSG 1454	2689
41	MISSISSIPPI STATE U	Holmes, B. J.	LARC	Cross, E. J., Jr.	NSG 1511	2690
41	MISSISSIPPI STATE U	Clever, W. W.	MSFC	Shepard, W. S.	NAS 8-31770	2679
41	NEW YORK UNIVERSITY	Hicks, R. M.	ARC	Garabedian, P. R.	NGR 33-016-201	2932
41	NEW YORK UNIVERSITY	Darden, C. M.	LARC	Ting, L.	NGL 33-016-119	2928
41	NEW YORK UNIVERSITY	Huber, P. W.	LARC	Agnone, A. M.	NGR 33-016-131	2929
41	NEW YORK UNIVERSITY	Edwards, C. L.	LARC	Zakkay, V.	NSG 1444	2933
41	NEW YORK UNIVERSITY	Liu, C. H.	LARC	Ting, L.	NSG 1469	2934
41	NO CAROLINA STATE U	Crane, H. L.	LARC	Smetana, F. O.	NSG 1077	3048
41	NO CAROLINA STATE U	Brooks, T. F.	LARC	Hodgson, T. H.	NSG 1377	3053
41	NO CAROLINA STATE U	Campbell, J. F.	LARC	Dejarnette, F. R.	NSG 1437	3054
41	NORTHWESTERN UNIV	Belsley, S. E.	ARC	Spencer, F. A.	NSG 2149	2018
41	NORTHWESTERN UNIV	Belsley, S. E.	ARC	Spencer, F. A.	NSG 2328	2019
41	OHIO STATE UNIV	Galloway, T. L.	ARC	Gregorek, G. M.	NAS 2-9714	3107
41	OHIO STATE UNIV	Hicks, T. M.	ARC	Gregorek, G. M.	NSG 2296	3123
41	OHIO STATE UNIV	McDevitt, J. B.	ARC	Korkan, K. D.	NSG 2298	3124
41	OHIO STATE UNIV	Barnwell, R. W.	LARC	Gregorek, G. M.	NAS 1-14406	3106
41	OKLAHOMA STATE UNIV	Steinle, F. W., Jr.	ARC	Tiederman, W. G.	NCA 2-575701	3175
41	OKLAHOMA STATE UNIV	Seiner, J. M.	LARC	McLaughlin, D. K.	NSG 1467	3176
41	OLD DOMINION UNIV	Erickson, W. D.	LARC	Roberts, A. S., Jr.	NGR 47-003-052	3632
41	OLD DOMINION UNIV	Harris, J. E.	LARC	Goglia, G. L.	NSG 1087	3637
41	OLD DOMINION UNIV	Harris, J. E.	LARC	Cooke, C. H.	NSG 1098	3638
41	OLD DOMINION UNIV	Kershner, D. D.	LARC	Barna, P. S.	NSG 1143	3640
41	OLD DOMINION UNIV	Davis, J. G., Jr.	LARC	Thornton, E. A.	NSG 1167	3642
41	OLD DOMINION UNIV	Harris, J. E.	LARC	Goglia, G. L.	NSG 1226	3644
41	OLD DOMINION UNIV	Peterson, J. B., Jr.	LARC	Goglia, G. L.	NSG 1315	3648
41	OLD DOMINION UNIV	Lamar, J. E.	LARC	Kuhlman, J. M.	NSG 1357	3653
41	OLD DOMINION UNIV	Hammond, C. E.	LARC	Goglia, G. L.	NSG 1370	3655
41	OLD DOMINION UNIV	Graves, R. A., Jr.	LARC	Tiwari, S. N.	NSG 1464	3662
41	OLD DOMINION UNIV	Creedon, J. F.	LARC	Breedlove, W. J., Jr.	NSG 1480	3667
41	OLD DOMINION UNIV	Harvey, W. D.	LARC	Goglia, G. L.	NSG 1491	3668
41	OLD DOMINION UNIV	Graves, R. A., Jr.	LARC	Tiwari, S. N.	NSG 1492	3669
41	OLD DOMINION UNIV	Kilgore, R. A.	LARC	Goglia, G. L.	NSG 1503	3671
41	OLD DOMINION UNIV	Barnwell, R. W.	LARC	Cooke, C. H.	NSG 1517	3673
41	OLD DOMINION UNIV	Moul, M. T.	LARC	Liberty, S. R.	NSG 1519	3674
41	OLD DOMINION UNIV	Yates, E. C., Jr.	LARC	Kandil, O. A.	NSG 1560	3677
41	OLD DOMINION UNIV	Lamar, J. E.	LARC	Goglia, G. L.	NSG 1561	3678
41	OREGON STATE UNIV	Iliff, K. W.	DFRC	Ruzicka, J.	NSG 4013	3198
41	PENN STATE U-UNIV PK	Fisher, B. D.	LARC	McCormick, B. W.	NSG 1308	3260
41	PENN STATE U-UNIV PK	Britsch, W. R.	LERC	Lakshminarayana, B.	NGL 39-009-007	3253
41	PENN STATE U-UNIV PK	Stone, J. R.	LERC	Arndt, R. E.	NGR 39-009-270	3259
41	PENN STATE U-UNIV PK	Heidmann, M. F.	LERC	Lakshminarayana, B.	NSG 3012	3265
41	PENN STATE U-UNIV PK	Gelder, T. F.	LERC	Henderson, R. E.	NSG 3031	3267
41	PENN STATE U-UNIV PK	Sockol, P. M.	LERC	Lakshminarayana, B.	NSG 3032	3268
41	PENN STATE U-UNIV PK	Sockol, P. M.	LERC	Lakshminarayana, B.	NSG 3212	3271

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41	POLY INST OF NY	Rudy, D. H.	LARC	Rubin, S. G.	NSG 1244	2948
41	POLY INST OF NY	Salas, M. D.	LARC	Moretti, G.	NSG 1248	2949
41	POLY INST OF NY	Swanson, R. C.	LARC	Rubin, S. G.	NSG 1559	2950
41	PRINCETON UNIVERSITY	Smith, G. A.	ARC	Dukes, T. A.	NGR 31-001-277	2780
41	PRINCETON UNIVERSITY	Horstman, C. C.	ARC	Bogdonoff, S. M.	NSG 2114	2784
41	PRINCETON UNIVERSITY	Davis, S. S.	ARC	Dowell, E. H.	NSG 2194	2785
41	PRINCETON UNIVERSITY	Horstman, C. C.	ARC	Settles, G. S.	NSG 2299	2786
41	PRINCETON UNIVERSITY	Miller, G. K.	LARC	Sockel, E.	NAS 1-13502	2763
41	PRINCETON UNIVERSITY	Reid, H. J., Jr.	LARC	Graham, D.	NGL 31-001-252	2777
41	PRINCETON UNIVERSITY	Mixson, J. S.	LARC	Dowell, E. H.	NSG 1253	2782
41	PURDUE UNIVERSITY	Berry, D. T.	DFRC	Laver, J. A.	NSG 4003	2117
41	PURDUE UNIVERSITY	Bishop, A. R.	LERC	Hoffman, J. D.	NGR 15-005-191	2108
41	PURDUE UNIVERSITY	Davidson, H. W.	LERC	L'Ecuyer, M. R.	NSG 3071	2111
41	PURDUE UNIVERSITY	Katsanis, T.	LERC	Thompson, H. D.	NSG 3105	2112
41	PURDUE UNIVERSITY	Lehtinen, B.	LERC	Leonard, R. G.	NSG 3119	2113
41	PURDUE UNIVERSITY	Serafini, J. S.	LERC	Sullivan, J. P.	NSG 3135	2114
41	PURDUE UNIVERSITY	Chamis, C. C.	LERC	Sun, C. T.	NSG 3185	2115
41	PURDUE UNIVERSITY	Lyons, V. J.	LERC	Skifstadt, J. G.	NSG 3213	2116
41	SOUTHERN METHODIST U	Bushnell, D. M.	LARC	Simpson, R. L.	NSG 1548	3425
41	STANFORD UNIVERSITY	Denery, D. G.	ARC	DeBra, D. B.	NAS 2-9083	1286
41	STANFORD UNIVERSITY	Franklin, J. A.	ARC	DeBra, D. B.	NSG 2100	1351
41	STANFORD UNIVERSITY	Galloway, T. L.	ARC	Shevell, R. S.	NSG 2190	1355
41	STANFORD UNIVERSITY	Belsley, S. E.	ARC	Dajani, J. S.	NSG 2203	1356
41	STANFORD UNIVERSITY	Chapman, G. T.	ARC	Karamcheti, K.	NSG 2233	1359
41	STANFORD UNIVERSITY	Peterson, V. L.	ARC	Karamcheti, K.	NSG 2255	1364
41	STANFORD UNIVERSITY	McCroskey, W. J.	ARC	Reynolds, W. C.	NSG 2258	1365
41	STANFORD UNIVERSITY	Nagel, D. C.	ARC	Karamcheti, K.	NSG 2297	1370
41	STANFORD UNIVERSITY	Chapman, G. T.	ARC	Karamcheti, K.	NSG 2308	1371
41	STANFORD UNIVERSITY	Hickey, D. H.	ARC	Karamcheti, K.	NSG 2317	1372
41	STANFORD UNIVERSITY	Wright, R. H.	ARC	Suppes, P.	NSG 2322	1373
41	STANFORD UNIVERSITY	Edwards, J. W.	DFRC	DeBra, D. B.	NSG 4002	1376
41	STANFORD UNIVERSITY	Doggett, R. V., Jr.	LARC	Ashley, H.	NGL 05-020-243	1323
41	STANFORD UNIVERSITY	Gaugler, R. E.	LERC	Kays, W. M.	NAS 3-14336	1287
41	TEL-AVIV UNIVERSITY	Mateer, G. G.	ARC	Brosh, A.	NSG 7311	3861
41	TEXAS A&I UNIVERSITY	Priem, R. J.	LERC	O'Hara, J. C.	NSG 3112	3428
41	TEXAS A&M UNIVERSITY	Wong, J. T.	ARC	Foster, J. W.	NSG 2226	3453
41	TEXAS A&M UNIVERSITY	Hovis, W. A.	GSFC	El-Sayed, S. Z.	NAS 5-22966	3430
41	TEXAS A&M UNIVERSITY	South, J. C., Jr.	LARC	Carlson, L. A.	NSG 1174	3450
41	TEXAS A&M UNIVERSITY	Chambers, J. R.	LARC	Chevalier, H. L.	NSG 1407	3452
41	UNIV OF ARIZONA	Ballhaus, W. F.	ARC	Seebass, A. R.	NSG 2112	1125
41	UNIV ARKANSAS-FAYETV	Ragent, B.	ARC	Testerman, M. K.	NGL 04-001-007	1158
41	UNIV CALIF-BERKELEY	Chapman, G. T.	ARC	Holt, M.	NGR 05-003-451	1421
41	UNIV CALIF-BERKELEY	Belsley, S. E.	ARC	Kanafani, A.	NSG 2127	1431
41	UNIV CALIF-BERKELEY	Marek, C. J.	LERC	Oppenheim, A. K.	NSG 3227	1438
41	UNIV CALIF-DAVIS	Marvin, J. G.	ARC	Launder, B.	NSG 2256	1461
41	UNIV CALIF-DAVIS	Nelson, D.	GSFC	Coulson, K. L.	NAS 5-22964	1454
41	UNIV CALIF-L ANGELES	Ahtye, W. F.	ARC	Meecham, W. C.	NSG 2290	1495
41	UNIV CALIF-L ANGELES	Edwards, J. W.	DFRC	Balakrishnan, A. V.	NSG 4015	1502
41	UNIV CALIF-L ANGELES	Hammond, C. E.	LARC	Friedmann, P.	NGR 05-007-414	1490
41	UNIV CALIF-L ANGELES	Friedman, R.	LERC	English, J. M.	NSG 3116	1499
41	UNIV CALIF-SAN DIEGO	Cary, A. M., Jr.	LARC	Libby, P. A.	NSG 1386	1559
41	UNIV CALIF-SAN DIEGO	Marek, C. J.	LERC	Libby, P. A.	NSG 3219	1565
41	UNIV OF CINCINNATI	Erzberger, H.	ARC	Slater, G. L.	NCA 2-130801	3135
41	UNIV OF CINCINNATI	Jones, R. E.	LERC	Kauffman, C. W.	NSG 3045	3141
41	UNIV OF CINCINNATI	Stepka, F. S.	LERC	Tabakoff, W.	NSG 3066	3142
41	UNIV COLORADO-BOLDR	Davis, S. S.	ARC	Kadlec, R. A.	NSG 2128	1704
41	UNIV COLORADO-BOLDR	Groeneweg, J. F.	LERC	Uberoi, M. S.	NSG 3181	1706
41	UNIV OF DAYTON	Acurio, J.	LERC	Militello, J.	NAS 3-21698	3151

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41	UNIV OF DAYTON	Camp, D. W.	MSFC	Luers, J. K.	NAS 8-31294	3153
41	UNIV OF DAYTON	Camp, D. W.	MSFC	Luers, J. K.	NAS 8-32111	3154
41	UNIV OF DELAWARE	Bushnell, D. M.	LARC	Danberg, J. E.	NSG 1513	1772
41	UNIV OF DELAWARE	Adamczyk, J. J.	LERC	Seidel, B. S.	NSG 3189	1774
41	UNIV OF FLORIDA	Malcolm, G. N.	ARC	Clarkson, M. H.	NSG 2120	1894
41	UNIV OF FLORIDA	Koenig, D. G.	ARC	Fearn, R. L.	NSG 2288	1895
41	UNIV OF FLORIDA	Margason, R. J.	LARC	Fearn, R. L.	NGL 10-005-127	1887
41	UNIV OF FLORIDA	Morgan, H. L., Jr.	LARC	Fearn, R. L.	NSG 1542	1893
41	UNIV HOUSTON-HOUSTON	Eggleston, J. M.	JSC	Michalopoulos, C. O.	NAS 9-15193	3472
41	UNIV HOUSTON-HOUSTON	Maestrello, L.	LARC	Hussain, A. K.	NSG 1475	3483
41	UNIV ILLINOIS-CHICGO	Evans, J. S.	LARC	Chung, P. M.	NSG 1150	2061
41	UNIV ILLINOIS-URBANA	Salmirs, S.	LARC	Jensen, R. S.	NAS 1-14731	2063
41	UNIV ILLINOIS-URBANA	Jordan, F. L., Jr.	LARC	Ormsbee, A. I.	NSG 1434	2073
41	UNIV ILLINOIS-URBANA	Bober, L. J.	LERC	Chow, W. L.	NGL 14-005-140	2067
41	UNIV OF IOWA	Marvin, J. G.	ARC	Ramaprian, B. R.	NSG 2300	2159
41	UNIV OF IOWA	Stallcop, J. R.	ARC	Stwalley, W. C.	NSG 2327	2160
41	UNIV OF IOWA	Stockman, N. O.	LERC	Chou, D. C.	NSG 3117	2161
41	UNIV OF KANSAS	Seiff, A.	ARC	Muirhead, V. U.	NCA 2-365702	2176
41	UNIV OF KANSAS	Fields, R. A.	DFRC	Lenzen, K. H.	NSG 4006	2192
41	UNIV OF KANSAS	Deets, D. A.	DFRC	Grose, D. L.	NSG 4007	2193
41	UNIV OF KANSAS	Jenkins, J. M.	DFRC	Lenzen, K. H.	NSG 4008	2194
41	UNIV OF KANSAS	Deets, D. A.	DFRC	Talley, H. E.	NSG 4012	2196
41	UNIV OF KANSAS	Edwards, J. W.	DFRC	Kotsabasis, A.	NSG 4017	2197
41	UNIV OF KANSAS	Crane, H. L.	LARC	Kohlman, D. L.	NGR 17-002-072	2179
41	UNIV OF KANSAS	Pride, R. A.	LARC	Lenzen, K. H.	NGR 17-004-027	2180
41	UNIV OF KANSAS	Lamar, J. E.	LARC	Roskam, J.	NSG 1046	2181
41	UNIV OF KANSAS	Campbell, J. F.	LARC	Lan, C. E.	NSG 1139	2182
41	UNIV OF KANSAS	Stephens, D. G.	LARC	Roskam, J.	NSG 1301	2185
41	UNIV OF KANSAS	Campbell, J. F.	LARC	Lan, C. E.	NSG 1537	2188
41	UNIV OF KANSAS	Holmes, B. J.	LARC	Roskam, J.	NSG 1543	2189
41	UNIVERSITY OF LOWELL	Fralich, R. W.	LARC	McElman, J. A.	NSG 1295	2547
41	UNIV MICH-ANN ARBOR	Feistel, T. W.	ARC	Kroeger, R. A.	NSG 2018	2613
41	UNIV MICH-ANN ARBOR	Anderson, S. B.	ARC	Kroeger, R. A.	NSG 2113	2614
41	UNIV MICH-ANN ARBOR	Alderette, T.	ARC	Howe, R. M.	NSG 2245	2615
41	UNIV MICH-ANN ARBOR	McCarty, J. L.	LARC	Clark, S. R.	NGL 23-005-010	2597
41	UNIV MICH-ANN ARBOR	Czarnecki, K. R.	LARC	Adamson, T. C., Jr.	NSG 1326	2608
41	UNIV MICH-ANN ARBOR	Dunning, R. S.	LARC	Vinh, N. X.	NSG 1448	2610
41	UNIV MICH-ANN ARBOR	McCarty, J. L.	LARC	Clark, S. K.	NSG 1494	2612
41	UNIV MICH-ANN ARBOR	Cooper, L. P.	LERC	Nicholls, J. A.	NSG 3148	2617
41	UNIV MICH-ANN ARBOR	Ercegovic, D. E.	LERC	Kauffman, C. W.	NSG 3165	2619
41	U MINN-MNPLS-ST PAUL	Erickson, L. L.	ARC	Moran, J. P.	NSG 2316	2656
41	UNIV MO-ROLLA	Coe, C. F.	ARC	Cronin, D. L.	NCA 2-450801	2709
41	UNIV MO-ROLLA	Mixson, J. S.	LARC	Koval, L. R.	NSG 1050	2710
41	UNIV MO-ROLLA	Hefner, J. N.	LARC	Patterson, G. K.	NSG 1452	2712
41	UNIV NEVADA-L VEGAS	Davis, S. S.	ARC	Fromme, J. A.	NSG 2140	2745
41	UNIV OF NEVADA-RENO	Presley, L. L.	ARC	Rose, W. C.	NSG 2291	2748
41	UNIV OF NOTRE DAME	Somers, D. M.	LARC	Mueller, T. J.	NSG 1419	2122
41	UNIV OF NOTRE DAME	Feiler, C. E.	LERC	Atassi, H.	NSG 3037	2123
41	UNIV OF NOTRE DAME	Crouse, J. E.	LERC	Roberts, W. B.	NSG 3133	2125
41	UNIV OF SOUTHAMPTON	Kilgore, R. A.	LARC	Goodyer, M. J.	NSG 7172	3856
41	UNIV OF SOUTHERN CAL	Maestrello, L.	LARC	Laufer, J.	NSG 1221	1642
41	UNIV OF SOUTHERN CAL	Stein, M.	LARC	Seide, P.	NSG 1401	1643
41	UNIV STHN COLORADO	Hruby, R. J.	ARC	Jenkins, R.	NSG 2048	1750
41	UNIV TENNESSEE-KNOXV	Hammond, C. E.	LARC	Lumsdaine, E.	NSG 1171	3361
41	UNIV TENNESSEE-KNOXV	Bland, S. R.	LARC	Kimble, K. R.	NSG 1224	3362
41	UNIV TENNESSEE-KNOXV	Dittmar, J. H.	LERC	Lunsdaine, E.	NGR 43-001-134	3360
41	UNIV TENNESSEE-KNOXV	Mercier, D. R.	MSFC	Smith, V. K., III	NAS 8-33225	3356
41	U TENNESSEE-NASHVILE	Robinson, J. C.	LARC	Blackburn, C. L.	NSG 1455	3369

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41	UNIV TEXAS-ARLINGTON	Rubesin, M. W.	ARC	Payne, F. R.	NSG 2077	3494
41	UNIV TEXAS-AUSTIN	Ballhaus, W. F.	ARC	Carey, G. F.	NSG 2338	3528
41	UNIV TEXAS-AUSTIN	Goodrich, W. D.	JSC	Wagner, J. B.	NAS 9-13680	3503
41	UNIV TEXAS-AUSTIN	Nitschke, H. A.	JSC	Crow, G. L.	NAS 9-15401	3509
41	UNIV TEXAS-AUSTIN	Hilton, D. A.	LARC	Blackstock, D. T.	NAS 1-14160	3495
41	UNIV OF TOLEDO	Spera, D. A.	LERC	Koza, K. R.	NSG 3139	3159
41	UNIV OF VIRGINIA	Kilgore, R. A.	LARC	Zapata, R. N.	NSG 1010	3691
41	UNIV OF VIRGINIA	Mayes, W. H.	LARC	Jacobson, I. D.	NSG 1180	3693
41	UNIV OF WASHINGTON	Chapman, G. T.	ARC	Childs, M. E.	NGL 48-002-047	3768
41	UNIV OF WASHINGTON	Lee, G.	ARC	Childs, M. E.	NGR 48-002-141	3770
41	UNIV OF WASHINGTON	Smith, D. W.	ARC	Joppa, R. G.	NSG 2176	3772
41	UNIV OF WASHINGTON	Corsiglia, V. R.	ARC	Joppa, R. G.	NSG 2260	3774
41	UNIV OF WASHINGTON	Heyson, H. H.	LARC	Rae, W. H.	NGL 48-002-035	3766
41	UNIV WISC-MILWAUKEE	Young, W. H., Jr.	LARC	Bratanow, T.	NGR 50-007-001	3837
41	VIRGINIA POLY INST	Marvin, J. G.	ARC	Pierce, F. J.	NSG 2301	3750
41	VIRGINIA POLY INST	Erickson, W. D.	LARC	Drew, D. R.	NGR 47-004-090	3718
41	VIRGINIA POLY INST	Montgomery, R. C.	LARC	Cliff, E. M.	NSG 1015	3720
41	VIRGINIA POLY INST	Montgomery, R. C.	LARC	VanLandingham, H. F.	NSG 1239	3725
41	VIRGINIA POLY INST	Hefner, J. N.	LARC	Nayfeh, A. H.	NSG 1255	3728
41	VIRGINIA POLY INST	Yates, E. C., Jr.	LARC	Mook, D. T.	NSG 1262	3729
41	VIRGINIA POLY INST	Creedon, J. F.	LARC	VanLandingham, H. F.	NSG 1354	3733
41	VIRGINIA POLY INST	Hefner, J. N.	LARC	Saric, W. S.	NSG 1358	3734
41	VIRGINIA POLY INST	Moss, J. N.	LARC	Lewis, C. H.	NSG 1520	3742
41	VIRGINIA POLY INST	Shaw, R. J.	LERC	Jakubowski, A. K.	NSG 3073	3751
41	VIRGINIA STATE COL	Lansing, D. L.	LARC	Agrawal, K. M.	NGL 47-014-009	3754
41	WASHINGTON UNIVERSTY	Mascy, A. C.	ARC	Haefner, L. E.	NSG 2170	2723
41	WAYNE STATE UNIV	Maestrello, L.	LARC	Chow, P. L.	NSG 1330	2635
41	WEST VIRGINIA UNIV	Morris, C. E., Jr.	LARC	Gibbs, E. H.	NSG 1412	3792
41	WICHITA STATE UNIV	Hicks, R. M.	ARC	Wentz, W. H., Jr.	NSG 2134	2202
41	WICHITA STATE UNIV	Noonan, K. W.	LARC	Rodgers, E. J.	NGR 17-003-021	2200
41	WICHITA STATE UNIV	McGhee, R. J.	LARC	Wentz, W. H., Jr.	NSG 1165	2201
41	WRIGHT STATE UNIV	Queijo, M. J.	LARC	Wells, W. R.	NSG 1417	3172
42	CAL STATE U-SACRAMEN	Priem, R. J.	LERC	Reardon, F. H.	NGR 05-058-003	1231
42	COLORADO STATE UNIV	Priem, R. J.	LERC	Mitchell, C. E.	NGR 06-002-095	1658
42	COLORADO STATE UNIV	Mantenieks, M. A.	LERC	Wilhelm, H. E.	NGR 06-002-147	1662
42	COLORADO STATE UNIV	Rawlin, V. K.	LERC	Kaufman, H. R.	NSG 3011	1668
42	GEORGIA INST OF TECH	Stevens, G. H.	LERC	Zimmer, R. P.	NAS 3-20110	1935
42	GEORGIA INST OF TECH	Priem, R. J.	LERC	Korkan, K. D.	NSG 3052	1959
42	HOWARD UNIVERSITY	Horner, G. C.	LARC	Jones, I. W.	NSG 1320	1830
42	MASS INST OF TECH	Pelouch, J. J., Jr.	LERC	Kolm, H. H.	NSG 3175	2513
42	MASS INST OF TECH	Schwenk, F. C.	HQ-RR	Mar, J. W.	NSG 7396	2539
42	NEW MEX ST U-LAS CR	Schlimmer, G. E.	KSC	Noda, T.	NAS10-9115	2818
42	OLD DOMINION UNIV	Dixon, S. C.	LARC	Thornton, E. A.	NSG 1507	3672
42	PENN STATE U-UNIV PK	Priem, R. J.	LERC	Faeth, G. M.	NGR 39-009-077	3257
42	POLY INST OF NY	Hoppe, J. C.	LARC	Lederman, S.	NSG 1198	2947
42	PRINCETON UNIVERSITY	Pelouch, J. J., Jr.	LERC	O'Neill, G. K.	NSG 3176	2787
42	PRINCETON UNIVERSITY	Lazar, J.	HQ-RP	Jahn, R. G.	NGL 31-001-005	2775
42	STANFORD UNIVERSITY	Howe, J. T.	ARC	Rana, D. S.	NSG 2085	1349
42	STANFORD UNIVERSITY	Nachtsheim, P. R.	ARC	Baganoff, D.	NSG 2166	1354
42	STANFORD UNIVERSITY	Kant, S.	GSFC	DeBra, D. B.	NAS 5-21960	1289
42	UNIV OF DAYTON	Entile, L. G.	LERC	Engler, N. A.	NAS 3-20392	3148
42	UNIV OF DAYTON	Gentile, L. C.	LERC	Engler, N. A.	NAS 3-21370	3150
42	UNIV OF DELAWARE	Cooper, P. A.	LARC	Pipes, R. B.	NSG 1409	1769
42	UNIV OF DELAWARE	McWithey, R. R.	LARC	Vinson, J. R.	NSG 1488	1771
42	UNIV OF LOUISVILLE	Burdett, G. L.	GSFC	Shelton, D.	NAS 5-23664	2215
42	UNIV OF LOUISVILLE	Pitzenberger, F. D.	MSFC	Childs, D. W.	NAS 8-31233	2216
43	ATHENS STATE COLLEGE	Shriver, E. L.	MSFC	McNutt, R. C.	NAS 8-32483	1015
43	AUBURN UNIV-AUBURN	Shackelford, B. W., Jr.	MSFC	Sforzini, R. H.	NCA 8-125	1026

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43	AUBURN UNIV-AUBURN	Nola, F. J.	MSFC	Russell, D.	NCA 8-128	1027
43	BUCKNELL UNIVERSITY	Gluyas, R. E.	LERC	Snyder, W. J.	NSG 3136	3209
43	CASE WESTERN RESERVE	Dunning, J. W., Jr.	LERC	Angus, J. C.	NSG 3074	3076
43	CASE WESTERN RESERVE	Fordyce, J. S.	LERC	Liu, C. C.	NSG 3203	3086
43	FLORIDA INST OF TECH	Franks, H. H.	KSC	Bowman, T. E.	NAS10-8399	1859
43	FLORIDA INST OF TECH	Howard, F. S.	KSC	Thomas, J. J.	NAS10-9461	1861
43	MASS INST OF TECH	Mularz, E. J.	LERC	Heywood, J. B.	NGR 22-009-378	2455
43	MASS INST OF TECH	Norgren, C. T.	LERC	Howard, J. B.	NSG 3102	2511
43	RICE UNIVERSITY	Kissinger, L. D.	JSC	Davis, S. H.	NAS 9-11827	3406
43	RICE UNIVERSITY	Kissinger, L. D.	JSC	Davis, S. H.	NAS 9-15630	3409
43	STATE U NY-STONY BRK	Cochran, T. H.	LERC	Berlad, A. L.	NSG 3051	3004
43	UNIV CALIF-SAN DIEGO	Haggard, J. B.	LERC	Williams, F. A.	NSG 3047	1561
43	UNIV OF FLORIDA	Sheibley, D. W.	LERC	Walker, R. D., Jr.	NGR 10-005-182	1890
43	UNIV ILLINOIS-URBANA	Cochran, T. H.	LERC	Strehlow, R. A.	NSG 3043	2078
43	UNIV OF KANSAS	Johnson, R. D.	ARC	Himmelstein, K.	NCA 2-365801	2177
43	UNIV OF PITTSBURGH	Kostiuk, T.	GSFC	Falk, J.	NAS 5-22892	3289
43	UNIV OF UTAH	Kourtides, D. A.	ARC	Hughes, B. M.	NAS 2-9950	3582
43	WEST VIRGINIA UNIV	Phillips, B. R.	LERC	Wen, C. Y.	NSG 3134	3793
44	COLORADO STATE UNIV	Fichtl, G. H.	MSFC	Sandhorn, V. A.	NAS 8-31688	1655
44	UNIV CALIF-BERKELEY	Kourtides, D. A.	ARC	Williamson, R. B.	NSG 2026	1430
44	UNIV ILLINOIS-CHICGO	Costes, N.	MSFC	Silver, M. L.	NAS 8-32993	2059
45	ALABAMA A&M UNIV	Teasdale, W. E.	JSC	Weathers, G. D.	NAS 9-14770	1001
45	ALABAMA A&M UNIV	Gould, J. M.	MSFC	Shiva, S. G.	NSG 8057	1008
45	ATHENS STATE COLLEGE	Woodis, K. W.	MSFC	Workman, G. L.	NAS 8-32834	1016
45	AUBURN UNIV-AUBURN	White, J. B.	MSFC	Carroll, B. D.	NAS 8-26930	1018
45	AUBURN UNIV-AUBURN	Keer, J. H.	MSFC	Pinson, L. J.	NAS 8-31223	1020
45	AUBURN UNIV-AUBURN	Matheney, J. L.	MSFC	Carroll, B. D.	NAS 8-31572	1021
45	AUBURN UNIV-AUBURN	Routh, D. E.	MSFC	Kerns, D. V.	NAS 8-33092	1025
45	CASE WESTERN RESERVE	Stevens, G. H.	LERC	Pao, Y. H.	NSG 3085	3078
45	CITY COLLEGE OF N Y	Kahle, D. R.	GSFC	Schilling, D. L.	NSG 5013	2845
45	CITY COLLEGE OF N Y	Land, C. K.	JSC	Schilling, D. L.	NAS 9-13940	2839
45	CLARKSON COL OF TECH	Rotnem, J. O.	LERC	Arozullah, M.	NSG 3191	2848
45	CLEVELAND STATE UNIV	Nieberding, W. C.	LERC	Maisel, J. F.	NSG 3222	3099
45	DUKE UNIVERSITY	Rodriguez, G. E.	GSFC	Wilson, T. G.	NAS 5-22475	3031
45	DUKE UNIVERSITY	Rodriguez, G. E.	GSFC	Wilson, T. G.	NAS 5-25351	3032
45	DUKE UNIVERSITY	Rodriguez, G. E.	GSFC	Wilson, T. G.	NGL 34-001-001	3033
45	DUKE UNIVERSITY	Hansen, I. G.	LERC	Wilson, T. G.	NSG 3157	3034
45	FLORIDA ATLANTIC U	Greene, E. P.	GSFC	Hadlock, F. O.	NAS 5-24437	1857
45	GEORGE WASHINGTON U	Rende, J. V.	GSFC	Helgert, H. J.	NAS 5-24431	1786
45	GEORGE WASHINGTON U	LeVine, D. M.	GSFC	Lang, R. H.	NSG 5288	1814
45	GEORGE WASHINGTON U	Croswell, W. F.	LARC	Liebowitz, H.	NGR 09-010-096	1795
45	GEORGE WASHINGTON U	Bailey, M. C.	LARC	Liebowitz, H.	NSG 1110	1797
45	GEORGIA INST OF TECH	King, J. L.	GSFC	Dees, J. W.	NAS 5-23710	1936
45	GEORGIA INST OF TECH	King, J. L.	GSFC	Schuchardt, J. M.	NAS 5-24480	1938
45	GEORGIA INST OF TECH	King, J. L.	GSFC	McMillan, R. W.	NSG 5012	1962
45	GEORGIA INST OF TECH	O'Neal, R. L.	LARC	Blue, M. D.	NAS 1-14654	1931
45	GEORGIA INST OF TECH	O'Neal, R. L.	LARC	Gaylord, T. K.	NAS 1-15370	1934
45	GEORGIA INST OF TECH	Poley, W. A.	LERC	Zimmer, R. P.	DEN 3 73	1929
45	HAMPTON INSTITUTE	Katzberg, S. J.	LARC	Trehan, A. K.	NSG 1294	3624
45	HAMPTON INSTITUTE	Katzberg, S. J.	LARC	Trehan, A. K.	NSG 1552	3628
45	HOFSTRA UNIVERSITY	Johnson, J. W.	LARC	Weissman, W. E.	NGR 33-209-002	2925
45	HOWARD UNIVERSITY	Savely, R. T.	JSC	Choudhury, A. K.	NSG 9010	1841
45	JOHNS HOPKINS UNIV	Abshire, J. B.	GSFC	Davidson, F.	NSG 5210	2265
45	JOHNS HOPKINS UNIV	Bavuso, S. J.	LARC	Masson, G. M.	NSG 1442	2259
45	MASS INST OF TECH	Shiue, J. C.	GSFC	Kong, J. A.	NAS 5-24139	2425
45	MASS INST OF TECH	Ippolitto, L.	GSFC	Staelin, D. H.	NAS 5-25091	2428
45	MASS INST OF TECH	Fitzmaurice, M. W.	GSFC	Kennedy, R. S.	NGL 22-009-013	2443
45	MASS INST OF TECH	Schaefer, D. H.	GSFC	McClellan, J. H.	NSG 5157	2520

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45	MASS INST OF TECH	Armstrong, E. S.	LARC	Athans, M.	NSG 1447	2485
45	MASS INST OF TECH	Armstrong, E. S.	LARC	Stein, G.	NSG 1553	2490
45	MISSISSIPPI STATE U	Wallace, G. R.	MSFC	Ingels, F. M.	NAS 8-31373	2678
45	NO CAR A&T STATE U	Henry, V.	GSFC	Williams, L. J.	NAS 5-24101	3036
45	NO CAR A&T STATE U	Hutchby, J. A.	LARC	Alexander, W. E.	NSG 1390	3039
45	NO CAROLINA STATE U	Croswell, W. F.	LARC	Kauffman, J. F.	NGR 34-002-188	3045
45	NO CAROLINA STATE U	Hutchby, J. A.	LARC	Hauser, J. R.	NSG 1116	3049
45	NO CAROLINA STATE U	Husson, C.	LARC	Snyder, W. E.	NSG 1353	3051
45	NO CAROLINA STATE U	Hatfield, J. J.	LARC	Stroh, R. W.	NSG 1355	3052
45	NO CAROLINA STATE U	Godlewski, M. P.	LERC	Hauser, J. R.	NGR 34-002-195	3046
45	OHIO STATE UNIV	Billingham, J.	ARC	Kraus, J. D.	NSG 2162	3119
45	OHIO STATE UNIV	Hirschmann, E.	GSFC	Hodge, D. B.	NAS 5-22575	3108
45	OHIO STATE UNIV	Gilreath, M. C.	LARC	Burnside, W. D.	NSG 1498	3118
45	OHIO UNIVERSITY	Reid, H. J., Jr.	LARC	McFarland, R. H.	NGR 36-009-017	3132
45	OLD DOMINION UNIV	Tripp, J. S.	LARC	Tcheng, P. L.	NSG 1079	3636
45	OLD DOMINION UNIV	Hellbaum, R. F.	LARC	Goglia, G. L.	NSG 1177	3643
45	OLD DOMINION UNIV	Campbell, T. G.	LARC	Becher, J.	NSG 1331	3651
45	OLD DOMINION UNIV	Gainer, P. A.	LARC	Varanasi, M. R.	NSG 1379	3656
45	RENSSELAER POLY-NY	Kelley, J. S.	JSC	Gutmann, R. J.	NAS 9-15453	2965
45	RICE UNIVERSITY	Henry, W.	HQ-RR	Coleson, W. B.	NSG 7490	3423
45	SAVANNAH STATE COL	Jayroe, R. R., Jr.	MSFC	Wenner, D. B.	NSG 8048	1978
45	SO UNIV-BATON ROUGE	Echelkamp, R. E.	JSC	Grewal, G. S.	NSG 9030	2235
45	SO UNIV-BATON ROUGE	White, J. B.	MSFC	Montgomery, V. T.	NSG 8053	2233
45	STANFORD UNIVERSITY	Sandler, H.	ARC	Popp, R. L.	NSG 2214	1357
45	STANFORD UNIVERSITY	Williams, T. S., Jr.	LARC	Tyler, G. L.	NAS 1-9701	1284
45	STANFORD UNIVERSITY	Pontious, C. E.	HQ-RE	McCarthy, J.	NASW 2916	1303
45	STANFORD UNIVERSITY	Fitzmaurice, M. W.	HQ-RE	Harris, S. E.	NGL 05-020-103	1321
45	TEXAS A&M UNIVERSITY	Farris, G. W.	JSC	Newton, R. W.	NAS 9-15311	3443
45	TEXAS A&M UNIVERSITY	Lytle, C. D.	LARC	Painter, J. H.	NSG 1374	3451
45	TEXAS A&M UNIVERSITY	Nowakowski, M. F.	MSFC	Porter, W. A.	NAS 8-26379	3434
45	TEXAS TECH UNIV	Day, J. L.	JSC	Portnoy, W. M.	NAS 9-11162	3463
45	TUSKEGEE INSTITUTE	Young, L. E.	MSFC	Doreswamy, C. V.	NSG 8038	1038
45	UNIV ALA-HUNTSVILLE	Carey, W. T., Jr.	MSFC	Carter, E. A.	NAS 8-32608	1057
45	UNIV OF ARIZONA	Roman, N. G.	HQ-SC	Tifft, W. G.	NSG 7142	1141
45	UNIV OF CINCINNATI	Sundberg, G. R.	LERC	Henderson, H. T.	NSG 3022	3139
45	UNIV OF CINCINNATI	Riley, T. J.	LERC	Nevin, J. H.	NSG 3024	3140
45	UNIV COLORADO-BOLDR	Kelsall, T.	GSFC	Lawrence, G. M.	NSG 5124	1709
45	UNIV OF DELAWARE	Parker, L. C.	WFC	Robinson, D. M.	NSG 6015	1776
45	UNIV OF DENVER	Booher, C. R.	JSC	Venditti, F. P.	NAS 9-15206	1735
45	UNIV OF FLORIDA	Jafferis, W.	KSC	Childers, D. G.	NAS10-9378	1883
45	UNIV OF FLORIDA	Walker, G. H.	LARC	Li, S. S.	NSG 1425	1891
45	UNIV OF FLORIDA	Godlewski, M. P.	LERC	Lindholm, F. A.	NSG 3018	1896
45	UNIV OF HAWAII-MANOA	Gilbert, L. J.	LERC	Hwang, H. H.	NSG 3132	1993
45	UNIV ILLINOIS-URBANA	Schaefer, D. H.	GSFC	Slotnick, D. L.	NAS 5-24275	2064
45	UNIV ILLINOIS-URBANA	Keating, T., Jr.	GSFC	Mittra, R.	NAS 5-25062	2065
45	UNIV OF KANSAS	Rango, A.	GSFC	Ulaby, F. T.	NAS 5-23777	2172
45	UNIV OF KANSAS	Croswell, W. F.	LARC	Moore, R. K.	NSG 1554	2190
45	UNIV MARYLAND-COL PK	Kelsall, T.	GSFC	Currie, D. G.	NAS 5-24305	2287
45	UNIV MARYLAND-COL PK	Levine, D. M.	GSFC	Harger, R. O.	NSG 5048	2323
45	UNIV MARYLAND-COL PK	Benz, H. F.	LARC	Lin, H. C.	NSG 1468	2318
45	UNIV MARYLAND-COL PK	Schy, A. A.	LARC	Wang, S. H.	NSG 1558	2319
45	UNIV MICH-ANN ARBOR	Migneault, G. E.	LARC	Meyer, J. F.	NSG 1306	2607
45	UNIV MO-COLUMBIA	Johnson, D. A.	ARC	Miles, J. B.	NCA 2-450604	2703
45	UNIV MO-COLUMBIA	Eggleston, T. W.	JSC	Tranter, W. H.	NAS 9-15477	2702
45	UNIV MO-ROLLA	Dawson, C. T.	JSC	Tranter, W. H.	NAS 9-14848	2708
45	UNIV OF NOTRE DAME	Seldner, K.	LERC	Sain, M. K.	NSG 3048	2124
45	UNIV OF NOTRE DAME	Burkhart, J. A.	LERC	Gabriel, G. J.	NSG 3182	2126

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45	UNIV OKLAHOMA-NORMAN	Gross, C.	LARC	Kahng, S. K.	NSG 1481	3187
45	UNIV OF PITTSBURGH	McBrien, E. F.	LERC	Hamilton, H. B.	NSG 3163	3300
45	UNIV SO CAROLINA-COL	Lowrey, D. O.	MSFC	Fellers, R. G.	NAS 8-28660	3321
45	UNIV OF SO FLORIDA	Triner, J. E.	LERC	Garrett, S. J.	NSG 3096	1920
45	UNIV OF SO FLORIDA	Caruso, S. V.	MSFC	Sergent, J.	NAS 8-31172	1916
45	UNIV OF SOUTHERN CAL	Kutz, R. L.	GSFC	Andrews, H. C.	NGL 05-018-118	1637
45	UNIV TENNESSEE-KNOXV	Allen, W.	GSFC	Rochelle, R. W.	NAS 5-24250	3343
45	UNIV TENNESSEE-KNOXV	Huggins, C. T.	MSFC	Gonzalez, R. C.	NAS 8-29271	3345
45	UNIV TEXAS-AUSTIN	Hirschmann, E.	GSFC	Straiton, A. W.	NAS 5-22576	3497
45	UNIV TEXAS-AUSTIN	Arndt, G. D.	JSC	Friedrich, O. M.	NAS 9-15482	3510
45	UNIV TEXAS-AUSTIN	Moeckel, W. E.	LERC	Powers, E. J.	NSG 3089	3529
45	UNIV OF TOLEDO	Lehtinen, B.	LERC	Leininger, G. G.	NSG 3084	3156
45	UNIV OF TOLEDO	Lehtinen, B.	LERC	Leininger, G. G.	NSG 3171	3161
45	UNIV OF UTAH	Wempe, T. E.	ARC	Plummer, R. P.	NGR 45-003-108	3588
45	UNIV OF VIRGINIA	Bundick, W. T.	LARC	McAlpine, G. A.	NSG 1128	3692
45	VIRGINIA POLY INST	Hirschmann, E.	GSFC	Bostian, C. W.	NAS 5-22577	3712
45	VIRGINIA POLY INST	Edge, J. T.	JSC	Demerdash, N. A.	NAS 9-15091	3714
45	VIRGINIA POLY INST	Montgomery, R. C.	LARC	VanLandingham, H. F.	NSG 1527	3746
45	VIRGINIA POLY INST	Maslowski, E. A.	LERC	Demerdash, N. A.	DEN 3 65	3708
45	WALLA WALLA COLLEGE	Schmidt, R. L.	GSFC	Heisler, R.	NAS 5-25063	3788
45	WORCESTER POLY INST	Godlewski, M. P.	LERC	Lanyon, H. P.	NSG 3137	2558
45	YALE UNIVERSITY	Schaefer, D. H.	GSFC	Barker, R. C.	NGL 07-004-005	1758
45	YESHIVA UNIVERSITY	Godlewski, M. P.	LERC	Pollak, F.	NSG 3123	3028
46	ALABAMA A&M UNIV	Humphries, W. R.	MSFC	Saha, H.	NSG 8041	1005
46	CALIF INST OF TECH	Gross, L. A.	MSFC	Acosta, A. J.	NAS 8-29313	1171
46	CAL STATE U-L ANGLES	England, C.	JPL	Gold, P. I.	NSG 7263	1226
46	CAL STATE U-L ANGLES	Pohly, J. G.	HQ-LU	Maniv, R.	NSG 7229	1224
46	CAL STATE U-NRTHRDGE	Coe, H. H.	LERC	Nypan, L. J.	NSG 3065	1228
46	CARNEGIE-MELLON UNIV	Srawley, J. E.	LERC	Swedlow, J. L.	NGR 39-087-053	3212
46	CARNEGIE-MELLON UNIV	Srawley, J. E.	LERC	Swedlow, J. L.	NSG 3172	3213
46	CARNEGIE-MELLON UNIV	Cunningham, R. E.	LERC	Hughes, W. F.	NSG 3202	3214
46	CASE WESTERN RESERVE	Ollendorf, S.	GSFC	Kamotani, Y.	NAS 5-24144	3063
46	CASE WESTERN RESERVE	Labus, T. M.	LERC	Ostrach, S.	NAS 3-21046	3061
46	CASE WESTERN RESERVE	Schafer, C. F.	MSFC	Ostrach, S.	NAS 8-31802	3064
46	CLEMSON UNIV-CLEMSON	Reveley, W. F.	JSC	Gaddis, J. L.	NAS 9-13669	3316
46	CLEMSON UNIV-CLEMSON	Poe, C. C., Jr.	LARC	Goree, J. G.	NSG 1297	3317
46	CLEVELAND STATE UNIV	Townsend, D. P.	LERC	Kasuba, R.	NAS 3-18547	3094
46	COLORADO STATE UNIV	Kerslake, W. R.	LERC	Wilbur, P. J.	NGR 06-002-112	1661
46	COLORADO STATE UNIV	Fichtl, G. H.	MSFC	Edwards, H. W.	NAS 8-31673	1654
46	GEORGIA INST OF TECH	Jones, W. R., Jr.	LERC	Winer, W. O.	NSG 3106	1960
46	HOWARD UNIVERSITY	Hayes, J. M.	GSFC	Bords, G.	NAS 5-24422	1822
46	IOWA STATE UNIV	Presley, L. L.	ARC	Cook, W. J.	NCA 2-340901	2134
46	ISRAEL INST OF TECH	Ludwig, L. P.	LERC	Etsion, I.	NSG 7317	3859
46	MASS INST OF TECH	Fichter, W. B.	LARC	Williams, J. H., Jr.	NSG 1349	2482
46	MISSISSIPPI STATE U	Broussard, P. H.	MSFC	Jones, E. W.	NCA 8-131	2682
46	NEW MEX ST U-LAS CR	West, W. W.	WFC	Gammill, B. G.	NAS 6-2686	2812
46	NO CAR A&T STATE U	Stuckey, J. M.	MSFC	Sharma, A. V.	NSG 8045	3041
46	NORTHWESTERN UNIV	Ludwig, L. P.	LERC	Burton, R. A.	NAS 3-21261	2013
46	NORTHWESTERN UNIV	Zaretsky, E. V.	LERC	Cheng, H. S.	NSG 3042	2021
46	NORTHWESTERN UNIV	Coy, J. J.	LERC	Cheng, H. S.	NSG 3143	2022
46	NORTHWESTERN UNIV	Wedeven, L. D.	LERC	Cheng, H. S.	NSG 3149	2023
46	OHIO STATE UNIV	Steger, J. L.	ARC	Nakamura, S.	NCA 2-565801	3112
46	OLD DOMINION UNIV	Hanks, B. R.	LARC	Ibrahim, S. R.	NSG 1459	3661
46	PRINCETON UNIVERSITY	Cassidy, J. F.	LERC	Sirignan, W. A.	NSG 3178	2788
46	RICE UNIVERSITY	Trevino, L. A.	JSC	Wierum, F. A.	NAS 9-15274	3408
46	SAN JOSE STATE UNIV	Mansfield, J. A.	ARC	Holmstrom, F.	NSG 2307	1276
46	SO UNIV-BATON ROUGE	Williamson, J. G.	MSFC	Tabony, J.	NSG 8025	2231
46	SO UNIV-BATON ROUGE	Trenkle, J. J.	MSFC	Fernald, F. G.	NSG 8029	2232

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46	SO UNIV-BATON ROUGE	Owen, R. B.	MSFC	Scott, R. L., Jr.	NSG 8056	2234
46	STANFORD UNIVERSITY	Goldstein, H. E.	ARC	Bates, C.	NGR 05-020-710	1340
46	STANFORD UNIVERSITY	Gaugler, R. E.	LERC	Johnston, J. P.	NSG 3124	1375
46	TENNESSEE STATE UNIV	Kent, M. I.	MSFC	Burns, R. G.	NSG 8032	3339
46	TENNESSEE TECH U	Priem, R. J.	LERC	Ventrice, M. B.	NGR 43-003-015	3341
46	TRENTON STATE COL	Marek, C. J.	LERC	Feng, C. C.	NSG 3180	2802
46	TUSKEGEE INSTITUTE	French, B. O.	JSC	Sellers, J. P., Jr.	NAS 9-13844	1033
46	TUSKEGEE INSTITUTE	Brantley, L. W.	MSFC	Sellers, J. P., Jr.	NSG 8054	1039
46	UNIV CALIF-BERKELEY	Marek, C. J.	LERC	Dailey, J. W.	NSG 3028	1437
46	UNIV CALIF-DAVIS	Pollack, J. B.	ARC	White, B. R.	NCA 2-180804	1458
46	UNIV CALIF-L ANGELES	Spera, D. A.	LERC	Friedman, P. P.	NSG 3082	1498
46	UNIV CALIF-L ANGELES	Burkhart, J. A.	LERC	Frederking, T. H.	NSG 3153	1500
46	UNIV OF CANTERBURY	Rice, E. J.	LERC	Eversman, W.	NSG 7192	3863
46	UNIV OF CINCINNATI	Monteith, J. H.	LARC	Brown, D. L.	NSG 1486	3138
46	UNIV OF CINCINNATI	Coy, J. J.	LERC	Huston, R. L.	NSG 3188	3145
46	UNIV OF DELAWARE	Deaton, J. W.	LARC	Pipes, R. B.	NSG 1304	1767
46	UNIV OF DENVER	Luczkowski, S. M.	JSC	Venditti, F. P.	NAS 9-15469	1736
46	UNIV ILLINOIS-URBANA	Scribbe, H. W.	LERC	Conry, T. F.	NSG 3098	2079
46	UNIV OF KANSAS	Forestieri, A. F.	LERC	Lenzen, K. H.	NSG 3087	2191
46	UNIV OF KENTUCKY	McCutcheon, E.	ARC	Knapp, C. E.	NAS 2-8883	2205
46	UNIV OF KENTUCKY	Haggard, J. B.	LERC	Altenkirch, R. A.	NSG 3114	2213
46	UNIV OF LOUISVILLE	Fleming, D. P.	LERC	Childs, D. W.	NSG 3200	2220
46	UNIV OF MIAMI	Bland, R. A.	KSC	Lee, S. S.	NAS10-9410	1908
46	UNIV MICH-ANN ARBOR	Beam, L. W.	LERC	Bolt, J. A.	NSG 3161	2618
46	UNIV MO-COLUMBIA	Webbon, B. W.	ARC	Miles, J. B.	NCA 2-450802	2704
46	UNIV MO-ROLLA	Wedeven, L. D.	LERC	Medrow, R. A.	NSG 3113	2713
46	UNIV NEBRASKA-LINCLN	Tanner, J. A.	LARC	Baumgarten, J. R.	NSG 1506	2739
46	UNIV NEBRASKA-LINCLN	Johnston, J. D.	MSFC	Kersten, L.	NAS 8-31897	2735
46	UNIV TENNESSEE-KNOXV	Graham, R. W.	LERC	Reid, R. L.	NSG 3173	3365
46	UNIV TENNESSEE-KNOXV	Sloan, J.	MSFC	Frost, W.	NAS 8-29584	3346
46	UNIV TENNESSEE-KNOXV	Guttman, C. H.	MSFC	Hung, J. C.	NAS 8-33065	3355
46	UNIV OF TOLEDO	Cunningham, R. E.	LERC	Keith, T. G.	NSG 3156	3160
46	UNIV OF VIRGINIA	Cunningham, R. E.	LERC	Gunter, E. J.	NSG 3177	3702
46	UNIV OF VIRGINIA	Goetz, O. K.	MSFC	Gunter, E. J.	NAS 8-31951	3688
46	UNIV OF WASHINGTON	Valentine, H. H.	LERC	Martini, W. R.	NSG 3152	3775
46	UNIV OF WASHINGTON	Valentine, H. H.	LERC	Martini, W. R.	NSG 3194	3776
46	VIRGINIA POLY INST	Hoffman, E. L.	LARC	Stinchcomb, W. W.	NSG 1254	3727
46	VIRGINIA POLY INST	Miserentino, R.	LARC	Hallauer, W. L., Jr.	NSG 1526	3745
47	ALABAMA A&M UNIV	Williams, J. R.	MSFC	Lal, R. B.	NAS 8-32945	1000
47	ARIZONA STATE UNIV	Williams, J. R.	MSFC	Wagner, J. B.	NAS 8-32937	1080
47	BROWN UNIVERSITY	Herbell, T. P.	LERC	Richman, M. H.	NSG 3118	3311
47	CARNEGIE-MELLON UNIV	Witzke, W. R.	LERC	Bhat, G. K.	NAS 3-20370	3210
47	CASE WESTERN RESERVE	Glasgow, T. K.	LERC	Ebert, L. J.	NGL 36-003-094	3067
47	CASE WESTERN RESERVE	Gray, H. R.	LERC	Hehemann, R. H.	NGR 36-027-051	3069
47	CASE WESTERN RESERVE	Fortini, A.	LERC	Dybbs, A.	NSG 3040	3073
47	CASE WESTERN RESERVE	Hirschberg, M. H.	LERC	Manson, S. S.	NSG 7035	3092
47	CLEVELAND STATE UNIV	Ashbrook, R. L.	LERC	Yeh, H. C.	NSG 3155	3098
47	COLUMBIA UNIVERSITY	Glasgow, T. K.	LERC	Tien, J. K.	NSG 3050	2871
47	CORNELL UNIVERSITY	Nelson, H. G.	ARC	Johnson, H. H.	NSG 2078	2910
47	CORNELL UNIVERSITY	Aron, P. R.	LERC	Ruoff, A. L.	NGR 33-010-189	2907
47	DREXEL UNIVERSITY	Grimes, H. H.	LERC	Lawley, A.	NSG 3128	3220
47	FLORIDA TECH UNIV	Bianca, C.	MSFC	Carroll, W. E.	NAS 8-32835	1868
47	GEORGE WASHINGTON U	Swann, R. T.	LARC	Liebowitz, H.	NSG 1155	1798
47	GEORGE WASHINGTON U	Roderick, G. L.	LARC	Liebowitz, H.	NSG 1289	1802
47	GEORGE WASHINGTON U	Roderick, G. L.	LARC	Yang, J. N.	NSG 1415	1804
47	GEORGE WASHINGTON U	Crews, J. H., Jr.	LARC	Liebowitz, H.	NSG 1449	1806
47	GEORGETOWN UNIV	Tenney, D. R.	LARC	Liebowitz, H.	NSG 1418	1818
47	GEORGIA INST OF TECH	Poe, C. C., Jr.	LARC	Hanagud, S. V.	NSG 1352	1953

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47	KENT STATE UNIV-KENT	Wintucky, E. G.	LERC	Johnson, D. L.	NSG 3159	3102
47	LEHIGH UNIVERSITY	Ashbrook, R. L.	LERC	Kraft, R. W.	NGL 39-007-007	3230
47	LEHIGH UNIVERSITY	Sovey, J. S.	LERC	Micale, F. J.	NSG 3193	3238
47	MASS INST OF TECH	Harris, J. W.	JSC	Uhlmann, D. R.	NGR 22-009-646	2461
47	MASS INST OF TECH	Byvik, C. E.	LARC	Gatos, H. C.	NSG 1190	2477
47	MASS INST OF TECH	Outlaw, R. A.	LARC	Gatos, H. C.	NSG 1337	2481
47	MASS INST OF TECH	Price, H. L.	LARC	McGarry, F. J.	NSG 1504	2488
47	MASS INST OF TECH	Scheuermann, C. M.	LERC	Flemings, M. C.	NSG 3046	2505
47	MASS INST OF TECH	Vary, A.	LERC	Williams, J. H., Jr.	NSG 3064	2507
47	MASS INST OF TECH	Vary, A.	LERC	Williams, J. H., Jr.	NSG 3210	2516
47	MASS INST OF TECH	Davidson, M. C.	MSFC	Gatos, H. C.	NAS 8-30537	2431
47	MASS INST OF TECH	Chassay, R. P.	MSFC	Uhlmann, D. R.	NAS 8-31350	2433
47	MASS INST OF TECH	Reeves, F. A.	MSFC	Uhlmann, D. R.	NAS 8-31552	2434
47	MASS INST OF TECH	VonTiesenhausen, G. F.	MSFC	Miller, R. H.	NAS 8-32925	2435
47	MICHIGAN TECH UNIV	Barrett, C. A.	LERC	Heckel, R. W.	NSG 3215	2564
47	NO CAR A&T STATE U	Rhodes, M. D.	LARC	Sharma, A. V.	NSG 1296	3037
47	NO CAR A&T STATE U	Buckley, J. D.	LARC	Botros, B. M.	NSG 1516	3040
47	NO CAROLINA STATE U	Long, E. R., Jr.	LARC	Memory, J. D.	NSG 1463	3055
47	NORTHWESTERN UNIV	Ludwig, L. P.	LERC	Burton, R. A.	NSG 3039	2020
47	OHIO STATE UNIV	Gray, H. R.	LERC	Beck, F. H.	NGL 36-008-051	3113
47	OHIO STATE UNIV	Bill, R. C.	LERC	Black, J. T.	NSG 3164	3125
47	OLD DOMINION UNIV	Lisagor, W. B.	LARC	Cupschalk, S. G.	NSG 1521	3675
47	PENN STATE U-UNIV PK	Fripp, A. L.	LARC	White, W. B.	NSG 1387	3262
47	PENN STATE U-UNIV PK	Hirschberg, M. H.	LERC	Zamrik, S. Y.	NGR 39-009-034	3256
47	PENN STATE U-UNIV PK	Sanders, W. A.	LERC	Bradt, R. C.	NSG 3016	3266
47	PURDUE UNIVERSITY	Roderick, G. L.	LARC	Sun, C. T.	NSG 1278	2109
47	RENSSELAER POLY-NY	Kuznetz, L. H.	JSC	Modest, M. F.	NAS 9-15109	2964
47	RENSSELAER POLY-NY	Swann, R. T.	LARC	Ansell, G. S.	NSG 1510	2971
47	RENSSELAER POLY-NY	Davidson, M. C.	MSFC	Wiedmann, H.	NAS 8-26146	2958
47	RENSSELAER POLY-NY	Reeves, F. A.	MSFC	Glicksman, M. E.	NAS 8-32425	2959
47	RENSSELAER POLY-NY	Williams, J. R.	MSFC	Wiedemeier, H.	NAS 8-32936	2962
47	RENSSELAER POLY-NY	Gilstad, D. A.	HQ-RW	Wiberly, S. E.	NGL 33-018-003	2966
47	SAN JOSE STATE UNIV	Mansfield, J. A.	ARC	Anderson, R. N.	NSG 2332	1279
47	STANFORD UNIVERSITY	Whiting, E. E.	ARC	Spicer, W. E.	NCA 2-745803	1313
47	STANFORD UNIVERSITY	Whiting, E. E.	ARC	Pound, G. M.	NCA 2-745807	1315
47	STANFORD UNIVERSITY	Rubesin, M. W.	ARC	Reynolds, W. C.	NGR 05-020-622	1335
47	STANFORD UNIVERSITY	Arnold, J. O.	ARC	Pound, G. M.	NSG 2251	1362
47	STANFORD UNIVERSITY	Arnold, J. O.	ARC	Heinemann, K.	NSG 2326	1374
47	STANFORD UNIVERSITY	Outlaw, R. A.	LARC	Madix, R. J.	NSG 1345	1344
47	STANFORD UNIVERSITY	Outlaw, R. A.	LARC	Madix, R. J.	NSG 1381	1345
47	SYRACUSE UNIVERSITY	Stermer, R. L.	LARC	Schroder, K.	NSG 1462	3020
47	TUSKEGEE INSTITUTE	Titran, R. H.	LERC	Ramirez, R. P.	NSG 3154	1037
47	UNIV CALIF-BERKELEY	Stephens, J. R.	LERC	Morris, J. W.	NGR 05-003-562	1428
47	UNIV CALIF-L ANGELES	Goldstein, H. E.	ARC	MacKenzie, J. D.	NCA 2-390803	1477
47	UNIV CALIF-L ANGELES	Riccitiello, S. R.	ARC	MacKenzie, J. D.	NSG 2320	1496
47	UNIV CALIF-L ANGELES	Williams, J. R.	MSFC	Bunshah, R. F.	NAS 8-33115	1475
47	UNIV CALIF-SAN DIEGO	Flood, D. J.	LERC	Oesterreicher, H.	NSG 3034	1560
47	UNIV CALIF-S BARBARA	Nelson, H. G.	ARC	Shanabarger, M. R.	NSG 2222	1595
47	UNIV OF CINCINNATI	Miner, R. V., Jr.	LERC	Antolovich, S. D.	NSG 3147	3144
47	UNIV OF DAYTON	Stevenson, S. M.	LERC	Martino, J. P.	NAS 3-21355	3149
47	UNIV OF DELAWARE	Namkoong, D.	LERC	Birchenall, C. E.	NSG 3184	1773
47	UNIV HOUSTON-HOUSTON	Viegas, J. R.	ARC	Faele Hussain, A. K.	NSG 2337	3484
47	UNIV OF IOWA	Rummler, D. R.	LARC	Wu, H. C.	NSG 1499	2158
47	UNIV OF IOWA	Schwenk, F. C.	HQ-RR	Valanis, K. C.	NSG 7257	2162
47	UNIV OF KANSAS	Rummler, D. R.	LARC	Zerwekh, R. P.	NSG 1269	2183
47	UNIV OF KANSAS	Howell, W. E.	LARC	Reese, C. D.	NSG 1281	2184
47	UNIV OF KENTUCKY	Brown, W. F., Jr.	LERC	Conrad, H.	NSG 3013	2212
47	UNIV OF KENTUCKY	Stephens, J. R.	LERC	Conrad, H.	NSG 3125	2214

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47	UNIV OF MIAMI	Lisagor, W. B.	LARC	Craig, H. L., Jr.	NSG 1283	1912
47	UNIV OF MIAMI	Shannon, J. L., Jr.	LERC	Craig, H. L., Jr.	NGR 10-007-118	1911
47	UNIV MICH-ANN ARBOR	Jones, J. L.	LARC	Felbeck, D. K.	NAS 1-15333	2566
47	UNIV MICH-ANN ARBOR	Fichter, W. B.	LARC	Felbeck, D. K.	NGR 23-005-528	2604
47	UNIV MICH-ANN ARBOR	Lauver, R. W.	LERC	Yeh, G. S.	NSG 3192	2620
47	UNIV MO-ROLLA	Geller, G.	MSFC	Summers, D. A.	NSG 8055	2715
47	UNIV NEBRASKA-LINCLN	Nelson, H. G.	ARC	Johnson, D. L.	NGR 28-004-025	2738
47	UNIV OF NEW ORLEANS	Wood, G. M.	LARC	Ioup, G. E.	NSG 1460	2239
47	UNIV OF PITTSBURGH	Kohl, F. J.	LERC	Meier, G. H.	NSG 3214	3302
47	UNIV OF SOUTHERN CAL	Conway, E. J.	LARC	Kroger, F. A.	NSG 1536	1645
47	UNIV TENNESSEE-KNOXV	Schafer, C. F.	MSFC	Collins, F.	NAS 8-32484	3351
47	UNIV TEXAS-EL PASO	Brandhorst, H. W., Jr.	LERC	Brient, S. J.	NSG 3146	3570
47	UNIV OF TORONTO	Foye, R. L.	LARC	Tennyson, R. C.	NSG 7219	3851
47	UNIV OF TORONTO	Baker, D. J.	LARC	Tennyson, R. C.	NSG 7409	3852
47	UNIV OF UTAH	Kourtides, D. A.	ARC	Hughes, M.	NAS 2-10064	3583
47	UNIV OF UTAH	Fripp, A. L.	LARC	Rosenberger, F. E.	NSG 1534	3590
47	UNIV OF WASHINGTON	Goldstein, H. E.	ARC	Mueller, J. I.	NCA 2-850801	3763
47	UNIV OF WASHINGTON	Gangler, J. J.	HQ-RW	Mueller, J. I.	NGL 48-002-004	3765
47	UNIV OF WYOMING	DiCarlo, J. A.	LERC	Adams, D. F.	NSG 3217	3847
47	UNIV OF WYOMING	Reeves, F. A.	MSFC	Saunders, C.	NAS 8-32486	3844
47	VANDERBILT UNIVERSTY	Caruso, S. V.	MSFC	Kinser, D. L.	NAS 8-30883	3371
47	VANDERBILT UNIVERSTY	Nichols, R. L.	MSFC	Kinser, D. L.	NAS 8-32695	3373
47	VANDERBILT UNIVERSTY	Clotfelter, W. N.	MSFC	Wert, J. J.	NAS 8-32894	3374
47	VIRGINIA POLY INST	Nelson, H. G.	ARC	Brinson, H. F.	NSG 2038	3749
47	VIRGINIA POLY INST	Whitcomb, J. D.	LARC	Reifsnider, K. L.	NSG 1364	3735
47	VIRGINIA POLY INST	Tenney, D. R.	LARC	Louthan, M. R., Jr.	NSG 1382	3737
47	VIRGINIA POLY INST	Tenney, D. R.	LARC	Houska, C. R.	NSG 1470	3740
47	VIRGINIA POLY INST	Tenney, D. R.	LARC	Unnam, J.	NSG 1531	3747
47	VIRGINIA POLY INST	Sovey, J. S.	LERC	Dwight, D. W.	NSG 3204	3752
47	YALE UNIVERSITY	Fryburg, G. C.	LERC	Rosner, D. E.	NSG 3107	1762
47	OREGON GRADUATE CTR	Morris, J. F.	LERC	Swanson, L. S.	NSG 3054	3189
49	AUBURN UNIV-AUBURN	Decker, A. J.	LERC	Ranson, W. F.	NSG 3109	1029
49	AUBURN UNIV-AUBURN	Routh, D. E.	MSFC	Cook, K. B.	NAS 8-32633	1023
49	AUBURN UNIV-AUBURN	Routh, D. E.	MSFC	Kerns, D. V.	NAS 8-32634	1024
49	AUBURN UNIV-AUBURN	Daniel, C. C.	MSFC	Flood, C. A., Jr.	NSG 8047	1030
49	BALL STATE UNIVERSTY	Hastings, L. J.	MSFC	Cosby, R.	NCA 8-121	2086
49	BALL STATE UNIVERSTY	Hastings, L. J.	MSFC	Cosby, R.	NCA 8-127	2087
49	BALL STATE UNIVERSTY	Hastings, L. J.	MSFC	Cosby, R.	NCA 8-129	2088
49	CASE WESTERN RESERVE	Smetana, J.	LERC	Collin, R. E.	NAS 3-21365	3062
49	CASE WESTERN RESERVE	Weigand, A. J.	LERC	Gibbons, D. F.	NSG 3126	3080
49	CASE WESTERN RESERVE	Carter, C. H.	HQ-LU	Bennett, W. R.	NGT 36-027-011	3071
49	CITY COLLEGE OF N Y	Braun, W. H.	LERC	Weinstein, H.	NSG 3174	2844
49	CITY COLLEGE OF N Y	Ernst, H. M.	HQ-EE	Schilling, D. L.	NSG 7144	2846
49	CLEVELAND STATE UNIV	Beach, R. F.	LERC	Burghart, J. H.	NSG 3223	3100
49	CLEVELAND STATE UNIV	Pohly, J. G.	HQ-LU	Bennett, W. R.	NGT 36-025-780	3095
49	COLORADO STATE UNIV	Fichtl, G. H.	MSFC	Winn, C. B.	NAS 8-31347	1653
49	COLUMBIA UNIVERSITY	Powell, C. A.	LARC	Borsky, P. N.	NSG 1164	2867
49	COLUMBIA UNIVERSITY	Cawthorn, J. M.	LARC	Galanter, E.	NSG 1550	2870
49	FLORIDA TECH UNIV	Springer, D. A.	KSC	Riad, S. M.	NAS10-9455	1871
49	GEORGE MASON UNIV	Cox, J.	LARC	Trehan, A. K.	NCA 1-6	3618
49	GEORGE WASHINGTON U	Morakis, J. C.	GSFC	Helgert, H. J.	NSG 5109	1813
49	GEORGE WASHINGTON U	Duberg, J. E.	LARC	Liebowitz, H.	NGL 09-010-053	1790
49	GEORGE WASHINGTON U	Straeter, T. A.	LARC	Maurer, W. D.	NSG 1472	1807
49	GEORGIA INST OF TECH	Keene, L. F.	KSC	Michelson, R. E.	NAS10-9097	1947
49	GEORGIA INST OF TECH	Newman, J. C., Jr.	LARC	Atluri, S. N.	NSG 1351	1952
49	GEORGIA INST OF TECH	Smith, O. E.	MSFC	Justus, C. G.	NAS 8-30657	1940
49	GEORGIA INST OF TECH	Reed, B.	MSFC	Pierce, A. D.	NAS 8-33093	1946
49	HOWARD UNIVERSITY	Hui, P. S.	GSFC	Choudhury, A. K.	NAS 5-24251	1821

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49	HOWARD UNIVERSITY	Pinson, L. D.	LARC	Bainum, P. M.	NSG 1414	1831
49	HOWARD UNIVERSITY	Pohly, J. G.	HQ-LU	Cox, E. L.	NGT 09-011-058	1828
49	ILL INST OF TECH	Braun, W. H.	LERC	Weinstein, H.	NSG 3141	2011
49	IOWA STATE UNIV	Kutler, P.	ARC	Anderson, D. A.	NCA 2-340704	2129
49	IOWA STATE UNIV	Kutler, P.	ARC	Pierson, B. L.	NCA 2-340705	2130
49	IOWA STATE UNIV	Pollack, J. B.	ARC	Iversen, J. D.	NCA 2-340802	2133
49	IOWA STATE UNIV	Fralich, R. W.	LARC	McDaniel, T. J.	NSG 1372	2136
49	JACKSON STATE UNIV	Anderson, W. J.	LERC	Chu, C. S.	NSG 3004	2674
49	LEHIGH UNIVERSITY	Chamis, C. C.	LERC	Sih, G. C.	NSG 3179	3237
49	LINCOLN UNIV-PA	Pohly, J. G.	HQ-LU	Williams, W., Jr.	NGT 39-108-750	3240
49	MASS INST OF TECH	Doolin, B. F.	ARC	Athans, M.	NGL 22-009-124	2445
49	MASS INST OF TECH	Stewart, J. D.	ARC	Young, L. R.	NSG 2230	2498
49	MASS INST OF TECH	Chamis, C. C.	LERC	McGarry, F. G.	NSG 3044	2504
49	MASS INST OF TECH	Braun, W. H.	LERC	Kerrebrock, J. L.	NSG 3187	2514
49	MASS INST OF TECH	Gevarter, W. B.	HQ-RE	Weinstein, M.	NSG 7227	2531
49	MISSISSIPPI STATE U	Sims, J. L.	MSFC	Thompson, J. F.	NAS 8-32912	2681
49	MORGAN STATE UNIV	Friedman, D. S.	GSFC	Taylor, J.	NAS 5-23558	2274
49	NEW MEX ST U-LAS CR	Pincus, B. R.	GSFC	Lawrence, H.	NAS 5-24241	2811
49	NEW YORK UNIVERSITY	Labus, T. L.	LERC	Keller, J. B.	NSG 3059	2935
49	NORTHWESTERN UNIV	Pohly, J. G.	HQ-LU	Ingersoll, D.	NGT 14-007-780	2017
49	OHIO STATE UNIV	Pohly, J. G.	HQ-LU	Stranges, J.	NGT 36-008-780	3117
49	OKLAHOMA STATE UNIV	Carr, R. E.	WFC	Roth, L. O.	NSG 6018	3177
49	OLD DOMINION UNIV	Card, M. F.	LARC	Tweed, J.	NSG 1279	3647
49	OLD DOMINION UNIV	Wieting, A. R.	LARC	Thornton, E. A.	NSG 1321	3649
49	OLD DOMINION UNIV	Groom, N. J.	LARC	Roberts, A. S., Jr.	NSG 1473	3665
49	OLD DOMINION UNIV	Sutton, K.	LARC	Tiwari, S. N.	NSG 1500	3670
49	OLD DOMINION UNIV	Carter, C. H.	HQ-LU	McRee, G. J.	NGT 47-003-028	3633
49	OLD DOMINION UNIV	Carter, C. H.	HQ-LU	Goglia, G. L.	NGT 47-003-029	3634
49	PENN STATE U-UNIV PK	Berkopec, F. D.	LERC	Robinson, J. W.	NSG 3097	3269
49	PRAIRIE VIEW A&M U	Pohly, J. G.	HQ-LU	Greaux, A. E.	NGT 44-033-750	3399
49	PRINCETON UNIVERSITY	Kelsall, T.	GSFC	Lowrance, J. L.	NSG 5063	2789
49	PRINCETON UNIVERSITY	McPherson, W. B.	MSFC	Caveny, L. H.	NAS 8-33102	2774
49	RENSSELAER POLY-NY	Gevarter, W. B.	HQ-RE	Yerazunis, S. W.	NSG 7369	2976
49	RENSSELAER POLY-NY	Tarver, P.	HQ-SL	Yerazunis, S. W.	NGL 33-018-091	2968
49	RICE UNIVERSITY	Guttman, C. H.	MSFC	Few, A. A.	NAS 8-33023	3405
49	SAN JOSE STATE UNIV	Mansfield, J. A.	ARC	Holmstrom, F.	NSG 2224	1265
49	SAN JOSE STATE UNIV	Mansfield, J. A.	ARC	Anderson, R.	NSG 2235	1266
49	STANFORD UNIVERSITY	Erzberger, H.	ARC	Bryson, A. E., Jr.	NGL 05-020-007	1318
49	STANFORD UNIVERSITY	Billingham, J.	ARC	Peterson, A. M.	NSG 2121	1352
49	STANFORD UNIVERSITY	Lorell, K. R.	ARC	Powell, J. D.	NSG 2246	1360
49	STANFORD UNIVERSITY	Carter, C. H.	HQ-LU	Barfield, B. F.	NGT 05-020-409	1341
49	STANFORD UNIVERSITY	Carter, C. H.	HQ-LU	Bershader, D.	NGT 05-020-412	1342
49	TENNESSEE STATE UNIV	Pohly, J. G.	HQ-LU	Malkani, M. J.	NGT 43-014-750	3338
49	TEXAS A&I UNIVERSITY	Pohly, J. G.	HQ-LU	Franke, E. A.	NGT 44-073-750	3427
49	TUSKEGEE INSTITUTE	Pohly, J. G.	HQ-LU	Dybczak, Z. W.	NGT 01-005-750	1034
49	TUSKEGEE INSTITUTE	Pohly, J. G.	HQ-LU	Sams, U. H.	NGT 01-005-780	1035
49	UNIV OF AKRON	Pohly, J. G.	HQ-LU	Velez, V.	NGT 36-001-780	3134
49	UNIV ALA-HUNTSVILLE	Carter, C. H.	HQ-LU	Head, R. R.	NGT 01-008-021	1061
49	UNIV ALA-UNIVERSITY	Morton, R. R.	MSFC	April, G. C.	NAS 8-29100	1063
49	UNIV ALA-UNIVERSITY	Carter, C. H.	HQ-LU	Barfield, B. F.	NGT 01-002-080	1067
49	UNIV ALA-UNIVERSITY	Carter, C. H.	HQ-LU	Lueg, R. E.	NGT 01-002-095	1068
49	UNIV ALA-UNIVERSITY	Carter, C. H.	HQ-LU	Barfield, B. F.	NGT 01-002-099	1069
49	UNIV CALIF-BERKELEY	Chang, T. C.	GSFC	Angelakos, D. J.	NSG 5093	1439
49	UNIV CALIF-L ANGELES	Inouye, M.	ARC	Cole, J. D.	NSG 2270	1494
49	UNIV CALIF-L ANGELES	Sobieszczanski, J.	LARC	Schmit, L. A.	NSG 1490	1493
49	UNIV CALIF-SAN DIEGO	Schaefer, D. H.	GSFC	Lee, S. H.	NGR 05-009-264	1558
49	UNIV OF CINCINNATI	Card, M. F.	LARC	Nayfeh, A. H.	NSG 1185	3137
49	UNIV OF CINCINNATI	Pohly, J. G.	HQ-LU	Brown, J.	NGT 36-004-780	3136

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49	UNIV COLORADO-BOLDR	Senn, E. H.	LARC	Fosdick, L. D.	NSG 1476	1702
49	UNIV COLORADO-BOLDR	Loendorf, D. D.	LARC	Jordan, H. F.	NSG 1489	1703
49	UNIV OF FLORIDA	Heath, D. F.	GSFC	Green, A. E.	NAS 5-22908	1876
49	UNIV HOUSTON-HOUSTON	Kennedy, M. G.	JSC	Lee, W. B.	NAS 9-15680	3476
49	UNIV HOUSTON-HOUSTON	Carter, C. H.	HQ-LU	Huang, C. J.	NGT 44-005-114	3481
49	UNIV HOUSTON-HOUSTON	Carter, C. H.	HQ-LU	Huang, C. J.	NGT 44-005-115	3482
49	UNIV OF KANSAS	Saltzman, E. J.	DFRC	Muirhead, V. U.	NSG 4009	2195
49	UNIV MARYLAND-COL PK	Caudill, L. O.	GSFC	McIlrath, T. J.	NAS 5-25132	2289
49	UNIV MARYLAND-COL PK	Chapman, J. W.	GSFC	Wockenfuss, W. A.	NCA 5-28	2298
49	UNIV MARYLAND-COL PK	Degnan, J. J.	GSFC	Hochuli, U. E.	NSG 5042	2322
49	UNIV MARYLAND-COL PK	McGarry, F. E.	GSFC	Basili, V. R.	NSG 5123	2329
49	UNIV MARYLAND-COL PK	Carter, C. H.	HQ-LU	Emad, F. P.	NGT 21-002-254	2316
49	UNIV MICH-ANN ARBOR	Fish, R. H.	ARC	Springer, G. S.	NSG 2333	2616
49	UNIV OF NEW MEXICO	Pohly, J. G.	HQ-LU	Etter, D. M.	NGT 32-004-770	2833
49	UNIV OKLAHOMA-NORMAN	Pohly, J. G.	HQ-LU	Thomas, G.	NGT 37-003-760	3185
49	UNIV OF PERU	Christie, C. J.	GSFC	Unavailable	NASW 7	3864
49	UNIV OF RHODE ISLAND	Pritchard, E. B.	LARC	Spaulding, M. L.	NSG 1008	3312
49	UNIV SO MISSISSIPPI	Hopkins, W. L.	NSTL	Brundage, W. G.	NAS13-95	2695
49	UNIV TENNESSEE-KNOXV	Sovie, R. J.	LERC	Dicks, J. B.	NSG 3224	3366
49	UNIV TEXAS-AUSTIN	Richard, R. R.	JSC	Hartwig, W. H.	NAS 9-14491	3504
49	UNIV TEXAS-AUSTIN	Pels, G. F.	JSC	Tucker, A. J.	NAS 9-15217	3508
49	UNIV OF TOLEDO	Labus, T. L.	LERC	DeWitt, K. J.	NSG 3121	3158
49	UNIV OF UTAH	Card, M. F.	LARC	Resch, R. D.	NSG 1313	3589
49	UNIV OF VIRGINIA	Lamb, G. M.	GSFC	Mattauch, R. J.	NAS 5-24218	3687
49	UNIV OF VIRGINIA	Conner, D. W.	LARC	Kuhlthau, A. R.	NAS 1-14908	3683
49	UNIV OF VIRGINIA	Hueschen, R. M.	LARC	Cook, G. E.	NSG 1388	3695
49	UNIV OF VIRGINIA	Tapscott, R. J.	LARC	Jacobson, I. D.	NSG 1399	3696
49	VANDERBILT UNIVERSTY	Caruso, S. V.	MSFC	Kinser, D. L.	NAS 8-32437	3372
49	VIRGINIA POLY INST	Martin, D. J.	LARC	Robertson, R. M.	NAS 1-13175	3709
49	VIRGINIA POLY INST	Davis, J. G., Jr.	LARC	Herakovich, C. T.	NGR 47-004-129	3719
49	VIRGINIA POLY INST	Hoffman, E. L.	LARC	Herakovich, C. T.	NSG 1250	3726
49	VIRGINIA POLY INST	Miserentino, R.	LARC	Hallauer, W. L., Jr.	NSG 1276	3731
49	VIRGINIA POLY INST	Hayduk, R. J.	LARC	Kamat, M. P.	NSG 1546	3748
51	ALABAMA A&M UNIV	Allen, R. E.	MSFC	Savage, J.	NSG 8042	1006
51	ALABAMA A&M UNIV	Snyder, R. S.	MSFC	Gibson, W. L.	NSG 8051	1007
51	ALABAMA A&M UNIV	Snyder, R. S.	MSFC	Savage, J.	NSG 8064	1010
51	ALCORN STATE UNIV	Wolverton, B. C.	NSTL	Latif, A.	NSG 8036	2673
51	AMHERST COLLEGE	Young, R. S.	HQ-SB	Leadbetter, E. R.	NSG 7325	2357
51	BAYLOR COL OF MED	Homick, J. L.	JSC	Igarashi, M.	NAS 9-14546	3383
51	BAYLOR COL OF MED	Walner, J. L.	JSC	Chalmers, J. H.	NAS 9-15552	3388
51	CALIF INST OF TECH	Williams, T. S., Jr.	LARC	Horowitz, N. H.	NAS 1-12311	1161
51	CALIF INST OF TECH	Young, R. S.	HQ-SB	Horowitz, N. H.	NGR 05-002-121	1184
51	CALIF INST OF TECH	Winter, D. L.	HQ-SB	Strumwasser, F.	NSG 7387	1211
51	CAL STATE U-L ANGLES	Hochstein, L. I.	ARC	Andreoli, A. J.	NSG 2199	1223
51	CENTRAL ST UNIV-OHIO	Fordyce, J. S.	LERC	Craft, T. J., Sr.	NGR 36-033-003	3093
51	COLORADO STATE UNIV	Holton, E. M.	ARC	Jordan, J. P.	NSG 2232	1665
51	CORNELL UNIVERSITY	Young, R. S.	HQ-SB	MacDonald, R. E.	NSG 7235	2919
51	EMORY UNIVERSITY	Holton, E. M.	ARC	Popovic, V. P.	NGL 11-001-009	1926
51	EMORY UNIVERSITY	Sandler, H.	ARC	Bourne, G. H.	NGR 11-001-016	1927
51	FLORIDA A&M UNIV	Klein, H. P.	ARC	Tolbert, M. E.	NSG 2311	1856
51	FLORIDA STATE UNIV	Young, R. S.	HQ-SB	Larock, P. A.	NGR 10-004-041	1864
51	FLORIDA STATE UNIV	Young, R. S.	HQ-SB	Friedmann, E. I.	NSG 7337	1867
51	GEORGE WASHINGTON U	Halstead, T. W.	HQ-SB	Waters, E.	NASW 3165	1789
51	GEORGIA INST OF TECH	Young, R. S.	HQ-SB	Hubbard, J. S.	NSG 7069	1965
51	HARDIN-SIMMONS UNIV	Young, R. S.	HQ-SB	Foster, T. L.	NGR 44-095-001	3390
51	HARVARD UNIVERSITY	Ellis, S. E.	ARC	Goldberg, A. L.	NSG 2144	2388
51	HARVARD UNIVERSITY	Nolte, R. W.	JSC	Newton, R. W.	NAS 9-15326	2376
51	HOWARD UNIVERSITY	Picciolo, G. L.	GSFC	Okrend, H. H.	NSG 5104	1834

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51	LEHIGH UNIVERSITY	Kornfield, D. M.	MSFC	VanDerHoff, J. W.	NAS 8-32406	3225
51	MASS INST OF TECH	MacElroy, R. D.	ARC	Rich, A.	NCA 2-425801	2441
51	MASS INST OF TECH	Daunton, N. G.	ARC	Hein, A.	NCA 2-425802	2442
51	MASS INST OF TECH	Daunton, N. G.	ARC	Bizzi, E.	NGR 22-009-798	2472
51	MASS INST OF TECH	Daunton, N. G.	ARC	Nauta, W. J.	NGR 22-009-826	2474
51	MASS INST OF TECH	Williams, T. S., Jr.	LARC	Rich, A.	NAS 1-9691	2409
51	MASS INST OF TECH	Young, R. S.	HQ-SB	Biemann, K.	NGR 22-009-005	2452
51	NEW YORK UNIVERSITY	Reeves, F. A.	MSFC	Johnson, A. J.	NAS 8-33099	2927
51	NORTH GEORGIA COL	Downs, S. W., Jr.	MSFC	Biesbrock, J. A.	NAS 8-30619	1976
51	OHIO STATE UNIV	Mehler, W. R.	ARC	Lim, D. J.	NSG 2220	3122
51	OHIO UNIVERSITY	Halstead, T. W.	HQ-SB	Jaffe, M. J.	NSG 7352	3133
51	OREGON STATE UNIV	Nachtwey, D. S.	JSC	VanDyke, H.	NAS 9-14860	3193
51	PENN STATE U-UNIV PK	Morrison, D. R.	JSC	Hymer, W. C.	NAS 9-15566	3250
51	PENN STATE U-UNIV PK	Young, R. S.	HQ-SB	Casida, L. E., Jr.	NGR 39-009-180	3258
51	PRINCETON UNIVERSITY	Reeves, F. A.	MSFC	Saville, D. A.	NAS 8-32614	2773
51	PRINCETON UNIVERSITY	Halstead, T. W.	HQ-SB	Jacobs, W. P.	NSG 7280	2794
51	PURDUE UNIVERSITY	Halstead, T. W.	HQ-SB	Mitchell, C. A.	NSG 7278	2119
51	RENSSELAER POLY-NY	Young, R. S.	HQ-SB	Wedler, F. C.	NSG 7065	2973
51	RENSSELAER POLY-NY	Young, R. S.	HQ-SB	Pope, D. H.	NSG 7345	2975
51	RICE UNIVERSITY	Halstead, T. W.	HQ-SB	Ward, C. H.	NASW 3164	3410
51	SAN JOSE STATE UNIV	Klein, H. P.	ARC	Neptune, J. A.	NSG 2090	1259
51	SAN JOSE STATE UNIV	Dalton, B. P.	ARC	Ballard, R. W.	NSG 2213	1263
51	SAN JOSE STATE UNIV	Williams, B. A.	ARC	Lund, G. F.	NSG 2293	1273
51	SAN JOSE STATE UNIV	Suri, K. P.	ARC	Fox, R. A.	NSG 2339	1280
51	SO DAKOTA SCHL MINES	Hull, W. E.	JSC	Gowen, R. J.	NAS 9-15522	3327
51	SOUTHEASTN OKLA ST U	Bostwick, L. G.	KSC	Robinson, J. L.	NSG 802	3180
51	SO ILL UNIV-CARBONDL	Young, R. S.	HQ-SB	Yopp, J. H.	NGR 14-008-026	2025
51	SO ILL UNIV-CARBONDL	Young, R. S.	HQ-SB	Yopp, J. H.	NSG 7394	2027
51	STANFORD UNIVERSITY	Danellis, J. V.	ARC	Barchas, J. D.	NCA 2-745706	1305
51	STANFORD UNIVERSITY	Hochstein, L.	ARC	Matin, A.	NCA 2-745719	1309
51	STANFORD UNIVERSITY	MacElroy, R. D.	ARC	Loew, G. B.	NCA 2-745721	1310
51	STANFORD UNIVERSITY	Williams, T. S., Jr.	LARC	Lederberg, J.	NAS 1-9692	1283
51	STANFORD UNIVERSITY	Young, R. S.	HQ-SB	Lederberg, J.	NGR 05-020-004	1328
51	STATE UNIV NY-ALBANY	Rummel, J. A.	JSC	Farhi, L. E.	NSG 9028	2989
51	STATE UNIV NY-ALBANY	Williams, J. R.	MSFC	VanOss, C. J.	NAS 8-32947	2979
51	STATE U NY-STONY BRK	Halstead, T. W.	HQ-SB	Krikorian, A. D.	NSG 7270	3012
51	TEMPLE UNIVERSITY	Nachtwey, D. S.	JSC	Urbach, F.	NAS 9-14979	3281
51	TEXAS TECH UNIV	Holton, E. M.	ARC	Kenny, A. D.	NSG 2137	3464
51	TEXAS TECH UNIV	Halstead, T. W.	HQ-SB	Hartman, H. B.	NSG 7435	3465
51	TULANE UNIVERSITY	MacElroy, R. D.	ARC	Johnson, E. J.	NCA 2-800801	2236
51	TULANE UNIVERSITY	Weigand, A. J.	LERC	Weinstein, A. M.	NSG 3209	2238
51	TUSKEGEE INSTITUTE	Philpott, D. E.	ARC	Sapp, W. J.	NSG 2330	1036
51	UNIV ALA-BIRMINGHAM	Rhodes, P. H.	MSFC	Sachs, G.	NAS 8-32923	1040
51	UNIV ALA-BIRMINGHAM	Snyder, R. S.	MSFC	Chiovetti, R., Jr.	NAS 8-33014	1041
51	UNIV OF ARIZONA	Snyder, R. S.	MSFC	Bartels, P. H.	NAS 8-31948	1102
51	UNIV OF ARIZONA	Williams, J. R.	MSFC	Bier, M.	NAS 8-32950	1104
51	UNIV CALIF-BERKELEY	Lanyi, J. K.	ARC	Packer, L.	NCA 2-50801	1407
51	UNIV CALIF-BERKELEY	Halstead, T. W.	HQ-SB	Pace, N.	NSG 7262	1449
51	UNIV CALIF-BERKELEY	Halstead, T. W.	HQ-SB	Pace, N.	NSG 7336	1451
51	UNIV CALIF-DAVIS	Oyama, J.	ARC	Smith, A. H.	NGL 05-004-008	1459
51	UNIV CALIF-DAVIS	Oyama, J.	ARC	Horowitz, B. A.	NSG 2234	1460
51	UNIV CALIF-L ANGELES	Daunton, N. G.	ARC	Markham, C. H.	NGR 05-007-418	1492
51	UNIV CALIF-SAN DIEGO	Young, R. S.	HQ-SB	Yayanos, A. A.	NGR 05-009-213	1554
51	UNIV CALIF-SAN FRAN	Mehler, W. R.	ARC	Snyder, R. L.	NCA 2-665802	1579
51	UNIV CALIF-SAN FRAN	Heinrich, M. R.	ARC	Goldfine, I.	NCA 2-665808	1584
51	UNIV CALIF-SAN FRAN	Daunton, N. G.	ARC	Ochs, A. L.	NCA 2-665809	1585
51	UNIV CALIF-SAN FRAN	Young, R. S.	HQ-SB	Stoeckenius, W.	NSG 7151	1587
51	UNIV OF CHICAGO	Daunton, N. G.	ARC	Goldberg, J. M.	NGR 14-001-225	2047

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51	UNIV OF CHICAGO	Larson, C. A.	HQ-SB	Moran, H. F.	NSG 7303	2056
51	UNIV OF CONNECTICUT	Young, R. S.	HQ-SB	Leadbetter, E. R.	NSG 7450	1757
51	UNIV OF FLORIDA	Nachtwey, D. S.	JSC	Green, A. E.	NAS 9-15114	1878
51	UNIV OF FLORIDA	Nachtwey, D. S.	JSC	Howland, G. P.	NAS 9-15529	1879
51	UNIV OF HAWAII-MANOA	Young, R. S.	HQ-SB	Siegel, S. M.	NGL 12-001-042	1988
51	UNIV HOUSTON-HOUSTON	Graves, R. C.	JSC	Henney, H. R., Jr.	NAS 9-14857	3470
51	UNIV HOUSTON-HOUSTON	Halstead, T. W.	HQ-SB	Hendrix, D. H.	NSG 7300	3487
51	UNIV HOUSTON-HOUSTON	Young, R. S.	HQ-SB	Fox, G. E.	NSG 7440	3489
51	UNIV HOUSTON-HOUSTON	Halstead, T. W.	HQ-SB	Coules, J. R.	NSG 9042	3490
51	UNIV ILLINOIS-URBANA	Williams, B. A.	ARC	Heath, J. E.	NSG 2099	2076
51	UNIV OF LOUISVILLE	Holton, E. M.	ARC	Musacchia, X. J.	NSG 2325	2219
51	UNIV OF LOUISVILLE	Hoffman, R. A.	JSC	Keefe, J. R.	NAS 9-14632	2217
51	UNIV OF LOUISVILLE	Halstead, T. W.	HQ-SB	Fuller, P. M.	NSG 7441	2221
51	UNIV MARYLAND-COL PK	Scott, F. E.	MSFC	Colwell, R. R.	NAS 8-32148	2290
51	UNIV MD-EASTRN SHORE	Young, R. S.	HQ-SB	Joshi, J. M.	NSG 7470	2356
51	UNIV OF MIAMI	Miquel, J.	ARC	Rockstein, M.	NCA 2-438801	1909
51	UNIV OF MIAMI	Leach, C. S.	JSC	Epstein, M.	NAS 9-15473	1904
51	UNIV MICH-ANN ARBOR	Young, R. S.	HQ-SB	Rich, A.	NSG 7452	2633
51	UNIV MICH-ANN ARBOR	Halstead, T. W.	HQ-SB	Ross, M. D.	NSG 9047	2634
51	UNIV ORGEON-HLTH CTR	Reeves, F. A.	MSFC	Brooks, D. E.	NAS 8-32353	3206
51	UNIV ORGEON-HLTH CTR	Reeves, F. A.	MSFC	Seaman, G. V.	NAS 8-32609	3207
51	UNIV ORGEON-HLTH CTR	Nerrin, B. N.	MSFC	Brooks, D. E.	NAS 8-32817	3208
51	UNIV OF PENNSYLVANIA	Lintott, J. E.	JSC	Brown, A. H.	NAS 9-15531	3285
51	UNIV OF PENNSYLVANIA	Halstead, T. W.	HQ-SB	Brown, A. H.	NGR 39-010-149	3286
51	UNIV OF ROCHESTER	Young, R. S.	HQ-SB	Vishniac, H. S.	NSG 7366	3025
51	UNIV SAN FRANCISCO	Miquel, J.	ARC	Benton, E. V.	NSG 2063	1608
51	UNIV SAN FRANCISCO	Kraft, L. M.	ARC	Benton, E. V.	NSG 2304	1610
51	UNIV OF SANTA CLARA	Lawless, J. G.	ARC	Sweeney, M. A.	NCA 2-685801	1614
51	UNIV OF SANTA CLARA	Hochstein, L. I.	ARC	Tomlinson, G. A.	NCA 2-685808	1619
51	UNIV OF SANTA CLARA	Grindeland, R.	ARC	Fast, T.	NCA 2-685812	1623
51	UNIV OF SANTA CLARA	Mandel, A. D.	ARC	Caren, L. D.	NCA 2-685813	1624
51	UNIV SO CAROLINA-COL	Young, R. S.	HQ-SB	Rohlfing, D. L.	NSG 7096	3326
51	UNIV OF SOUTHERN CAL	Young, R. S.	HQ-SB	Strehler, B. L.	NSG 7367	1647
51	UNIV SO MISSISSIPPI	Wolverton, B. C.	NSTL	Stocks, P. K.	NAS13-54	2693
51	U TEX PUB HLTH-HUS	Rambout, P. C.	JSC	Booth, F.	NAS 9-15388	3577
51	UNIV OF TOLEDO	Geib, D. S.	HQ-SB	Diehn, B.	NSG 7424	3167
51	UNIV OF VIRGINIA	Holton, E. M.	ARC	Pitts, G. C.	NSG 2225	3701
51	UNIV WISC-MADISON	Holton, E. M.	ARC	Deluca, H.	NCA 2-865701	3812
51	UTAH STATE UNIV	Nachtwey, D. S.	JSC	Caldwell, M. M.	NAS 9-14871	3596
51	VANDERBILT UNIVERSTY	Hoffman, R. A.	JSC	Pratt, L. H.	NAS 9-15092	3375
51	WORCESTER POLY INST	Young, R. S.	HQ-SB	Danielli, J. F.	NSG 7154	2559
51	XAVIER UNIV-LA	Winget, C. M.	ARC	Ashman, P. U.	NGR 19-007-004	2240
51	YALE UNIVERSITY	Young, R. S.	HQ-SB	Morowitz, H. J.	NGR 07-004-009	1760
51	YALE UNIVERSITY	Halstead, T. W.	HQ-SB	Galston, A. W.	NSG 7290	1764
52	BAYLOR COL OF MED	Kimzey, S. L.	JSC	Criswell, B. S.	NAS 9-14322	3381
52	BAYLOR COL OF MED	Rippstein, W. J.	JSC	Duncan, W. C.	NAS 9-14407	3382
52	BAYLOR COL OF MED	Kimzey, S. L.	JSC	Johnson, P. C.	NAS 9-14662	3384
52	BAYLOR COL OF MED	Kimzey, S. L.	JSC	Criswell, B. S.	NAS 9-15457	3386
52	BAYLOR COL OF MED	Leach, C. S.	JSC	Diferrante, N.	NAS 9-15478	3387
52	HOWARD UNIVERSITY	Alterescu, S.	GSFC	Chang, P.	NAS 5-23799	1819
52	HOWARD UNIVERSITY	Friedman, D. S.	GSFC	Fischmann, E. J.	NSG 5127	1835
52	JOHNS HOPKINS UNIV	Danellis, J. V.	ARC	Gann, D. S.	NSG 2324	2261
52	MEHARRY MEDICAL COL	Alterescu, S.	GSFC	Anderson, R. S.	NAS 5-23801	3336
52	MOREHOUSE COLLEGE	Alterescu, S.	GSFC	Margolis, S.	NAS 5-23571	1966
52	OHIO STATE UNIV	Nicogossian, A.	HQ-LU	Keller, M. D.	NGT 36-008-007	3116
52	PENN STATE U-UNIV PK	Morrison, D. R.	JSC	Todd, P. W.	NAS 9-15584	3251
52	STANFORD UNIVERSITY	Sandler, H.	ARC	Harrison, D. C.	NGL 05-020-305	1325
52	STANFORD UNIVERSITY	Danellis, J. V.	ARC	Luetscher, J. A.	NGR 05-020-456	1332

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52	STANFORD UNIVERSITY	Sandler, H.	ARC	Ream, A. K.	NGR 05-020-634	1336
52	STANFORD UNIVERSITY	Sandler, H.	ARC	Popp, R. L.	NSG 2020	1348
52	STANFORD UNIVERSITY	Sandler, H.	ARC	Harrison, D. C.	NSG 2132	1353
52	UNIV CALIF-IRVINE	Mandel, A. D.	ARC	Tilles, J. G.	NGR 05-041-012	1463
52	UNIV CALIF-SAN DIEGO	Sandler, H.	ARC	Baily, N. A.	NGR 05-009-257	1557
52	UNIV TENNESSEE-KNOXV	Kimzey, S. L.	JSC	Chen, J. P.	NAS 9-15164	3357
52	UNIV TEXAS-AUSTIN	Sheibley, D. W.	LERC	Lagow, R. J.	NSG 3190	3530
52	U TEX HEALTH CTR-DAL	Hull, W. E.	JSC	Blomquist, C. G.	NSG 9026	3575
52	UNIV WISC-MADISON	Young, D. R.	ARC	Cameron, J. R.	NGR 50-002-051	3816
52	UNIV WISC-MADISON	Mandel, A. D.	ARC	Balish, E.	NGR 50-002-191	3819
52	UNIV WISC-MADISON	Mandel, A. D.	ARC	Dick, E. C.	NSG 2104	3822
52	VIRGINIA COMNWLTH U	Hull, W. E.	JSC	Eckberg, D. L.	NSG 9063	3706
52	VIRGINIA POLY INST	Day, J. L.	JSC	Rivers, D. B.	NAS 9-15287	3715
52	YALE UNIVERSITY	Mandel, A. D.	ARC	Evans, A. S.	NSG 2185	1761
53	BAYLOR COL OF MED	Hoffman, R. A.	JSC	Costa, A. J.	NAS 9-13737	3380
53	CASE WESTERN RESERVE	Weigand, A. J.	LERC	Gibbons, D. F.	NSG 3151	3084
53	CLEMSON UNIV-CLEMSON	Weigand, A. J.	LERC	Park, J. B.	NSG 3225	3319
53	COLUMBIA UNIVERSITY	Rambaut, P. C.	JSC	Bassett, C. A.	NAS 9-14931	2861
53	FLORIDA A&M UNIV	Alterescu, S.	GSFC	Fresh, F. A.	NAS 5-25165	1851
53	GEORGETOWN UNIV	Keil, L. C.	ARC	Kellar, K. J.	NCA 2-258701	1817
53	HARDING COLLEGE	Sawin, C. F.	JSC	Olree, H.	NAS 9-15596	1155
53	HARVARD UNIVERSITY	Leach, C. S.	JSC	Moore-Ede, M. C.	NSG 9054	2407
53	HOWARD UNIVERSITY	Sandler, H.	ARC	Cothran, L. N.	NGL 09-011-017	1825
53	HOWARD UNIVERSITY	Alterescu, S.	GSFC	Deloatch, E. M.	NSG 5081	1833
53	HOWARD UNIVERSITY	Yin, L. I.	GSFC	Ferguson, G. A.	NSG 5268	1838
53	JOHNS HOPKINS UNIV	Friedman, D. S.	GSFC	Long, D.	NAS 5-23732	2252
53	LINCOLN UNIV-PA	Alterescu, S.	GSFC	Frankowsky, J. W.	NAS 5-23800	3239
53	MASS INST OF TECH	Winget, C. M.	ARC	Wurtman, R. J.	NGR 22-009-627	2460
53	MASS INST OF TECH	Smith, M. C., Jr.	JSC	Karel, M.	NAS 9-12485	2438
53	OREGON STATE UNIV	Peterson, J.	JSC	Eisgruber, L.	NAS 9-15547	3194
53	PENN STATE U-UNIV PK	Keil, L. C.	ARC	Severs, W. B.	NSG 2122	3263
53	STANFORD UNIVERSITY	Holton, E. M.	ARC	Feldman, D.	NCA 2-745709	1306
53	STANFORD UNIVERSITY	Mandel, A. D.	ARC	Merigan, T.	NCA 2-745801	1311
53	STANFORD UNIVERSITY	Holton, E. M.	ARC	Feldman, D.	NCA 2-745802	1312
53	STANFORD UNIVERSITY	Young, D. R.	ARC	Nagel, D. C.	NCA 2-745804	1314
53	STANFORD UNIVERSITY	Sandler, H.	ARC	Meindl, J. D.	NGR 05-020-615	1334
53	STANFORD UNIVERSITY	Carle, G. C.	ARC	Angell, J.	NGR 05-020-690	1339
53	STANFORD UNIVERSITY	Young, D. R.	ARC	Steele, C. R.	NSG 2092	1350
53	STANFORD UNIVERSITY	Danellis, J. V.	ARC	Harrison, D. C.	NSG 2294	1369
53	ST U NY-UPST MED CTR	Leon, H. A.	ARC	Landaw, S. A.	NCA 2-765801	3017
53	TEMPLE UNIVERSITY	Nachtwey, D. S.	JSC	Urbach, F.	NAS 9-15207	3282
53	TULANE UNIVERSITY	Mehler, W. R.	ARC	Brizzee, K. R.	NSG 2139	2237
53	UNIV CALIF-BERKELEY	Ellis, S.	ARC	Nicholl, C.	NCA 2-50703	1402
53	UNIV CALIF-DAVIS	Greenleaf, J. E.	ARC	Bernauer, E. M.	NCA 2-180703	1456
53	UNIV CALIF-DAVIS	Rambaut, P. C.	JSC	Vogel, J. M.	NAS 9-15203	1455
53	UNIV CALIF-SAN DIEGO	Greenleaf, J. E.	ARC	West, J. B.	NGL 05-009-109	1545
53	UNIV CALIF-SAN DIEGO	Homick, J. L.	JSC	Bullock, T. H.	NSG 9048	1575
53	UNIV CALIF-SAN FRAN	Sandler, H.	ARC	Glantz, S. A.	NCA 2-665708	1577
53	UNIV CALIF-SAN FRAN	Callahan, P. X.	ARC	Asling, C. W.	NCA 2-665803	1580
53	UNIV CALIF-SAN FRAN	Grindeland, R.	ARC	Spencer, M.	NCA 2-665804	1581
53	UNIV CALIF-SAN FRAN	Keil, L. C.	ARC	Ramsay, D. J.	NCA 2-665807	1583
53	UNIV HOUSTON-CL LAKE	Sawin, C. F.	JSC	Coleman, A. E.	NAS 9-15642	3492
53	UNIV OF IOWA	Hull, W. E.	JSC	Abboud, F. M.	NSG 9060	2165
53	UNIV OF KENTUCKY	Sandler, H.	ARC	Knapp, C. F.	NSG 2318	2211
53	UNIV OF KENTUCKY	Hull, W. E.	JSC	Bhagat, P. K.	NAS 9-15452	2207
53	UNIV MARYLAND-BALT	Sharp, J. C.	ARC	Grenell, R. G.	NSG 2098	2278
53	UNIV MICH-ANN ARBOR	Homick, J. L.	JSC	Anderson, D. J.	NAS 9-15244	2593
53	UNIV MICH-ANN ARBOR	Reschke, M. F.	JSC	Anderson, D. J.	NAS 9-15663	2595

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53	U OKLA-HLTH SCI CTR	Sandler, H.	ARC	Stone, H. L.	NSG 2282	3181
53	UNIV SAN FRANCISCO	Barnes, C. M.	JSC	Benton, E. V.	NAS 9-15152	1605
53	UNIV WISC-MADISON	Friedman, D. S.	GSFC	Houston, N.	NAS 5-23500	3805
53	UNIV WISC-MADISON	Friedman, D. S.	GSFC	Fetzner, W. N.	NAS 5-24385	3808
53	UNIV WISC-MADISON	Rambaut, P. C.	JSC	Schnoes, H. K.	NAS 9-15580	3811
53	WAYNE STATE UNIV	Young, D. R.	ARC	Orne, D.	NSG 2008	2636
53	WRIGHT STATE UNIV	Young, D. R.	ARC	Beljan, J. R.	NSG 2034	3173
59	BAYLOR COL OF MED	Leach, C. S.	JSC	Suki, W. N.	NAS 9-14715	3385
59	BAYLOR COL OF MED	Morrison, D. R.	JSC	Twomey, J. J.	NAS 9-15669	3389
59	BOSTON UNIVERSITY	Larson, C. A.	HQ-SB	Fulton, G. P.	NGR 22-004-018	2362
59	BRANDEIS UNIVERSITY	Homick, J. L.	JSC	Lackner, J. R.	NAS 9-15147	2366
59	CAL STATE U-HAYWARD	Greenleaf, J. E.	ARC	Brock, P. J.	NCA 2-290801	1222
59	CLARKSON COL OF TECH	Halstead, T. W.	HQ-SB	McNulty, P. J.	NSG 7170	2849
59	COLORADO STATE UNIV	Hoffman, R. A.	JSC	Lett, J. T.	NSG 9045	1680
59	CORNELL UNIVERSITY	Morrison, D. R.	JSC	Rubin, A. L.	NAS 9-15378	2894
59	CORNELL UNIV-MED CTR	Danellis, J. V.	ARC	Reis, D. J.	NSG 2259	2924
59	EMORY UNIVERSITY	Daunton, N. G.	ARC	Perachio, A. A.	NGR 11-001-045	1928
59	FLORIDA A&M UNIV	Winget, C. M.	ARC	Walker, C. A.	NSG 2029	1854
59	FLORIDA A&M UNIV	Winget, C. M.	ARC	Soliman, K. F.	NSG 2183	1855
59	GEORGIA INST OF TECH	Quattrone, P. D.	ARC	Carden, J. L.	NSG 2323	1956
59	HAHNEMANN MED COL	Homick, J. L.	JSC	Digregorio, G. J.	NAS 9-15620	3224
59	JOHNS HOPKINS UNIV	Sebesta, P. D.	ARC	Ray, G. C.	NAS 2-9300	2249
59	KENTUCKY STATE UNIV	Morrison, J. D.	KSC	Kloek, G.	NSG 801	2204
59	LEHIGH UNIVERSITY	Morrison, D. R.	JSC	Nyiri, L. K.	NAS 9-15619	3228
59	LEHIGH UNIVERSITY	Reeves, F. A.	MSFC	VanDerHoff, J. W.	NAS 8-32657	3226
59	LA ST U&A&M COL-BRGE	Rusoff, L. L.	NSTL	Wolverton, V. C.	NAS13-38	2223
59	MARQUETTE UNIVERSITY	Rambaut, P. C.	JSC	Fitts, R. H.	NAS 9-15711	3795
59	MASS INST OF TECH	Daunton, N. G.	ARC	Young, L. R.	NSG 2032	2492
59	MASS INST OF TECH	Quattrone, P. D.	ARC	Karel, M.	NSG 2334	2501
59	MASS INST OF TECH	Quattrone, P. D.	ARC	Meissner, H. P.	NSG 2335	2502
59	MASS INST OF TECH	Luczkowski, S. M.	JSC	Young, L. R.	NAS 9-15343	2439
59	MIAMI UNIVERSITY	Homick, J. L.	JSC	Parker, D. E.	NAS 9-14538	3103
59	SAN FRAN STATE UNIV	Klein, H. P.	ARC	Burns, J. A.	NCA 2-660704	1239
59	SAN FRAN STATE UNIV	Oyama, J.	ARC	Kakihana, R.	NSG 2281	1247
59	SO UNIV-BATON ROUGE	Sandler, H.	ARC	Ray, G. C.	NSG 2041	2230
59	STANFORD UNIVERSITY	Mehler, W. R.	ARC	Chow, K. L.	NGR 05-020-435	1330
59	STANFORD UNIVERSITY	Carter, C. H.	HQ-LU	Beard, R. R.	NGT 05-020-777	1343
59	STANFORD UNIVERSITY	Young, R. S.	HQ-SB	Bonner, W. A.	NGL 05-020-582	1326
59	TEXAS A&M UNIVERSITY	Stonesifer, G. R.	GSFC	Rouse, J. W., Jr.	NAS 5-20796	3429
59	TEXAS A&M UNIVERSITY	Smith, M. C., Jr.	JSC	Burns, E. E.	NAS 9-12434	3437
59	UNIV OF ARIZONA	Quattrone, P. D.	ARC	Phillips, J. M.	NSG 2309	1127
59	UNIV OF ARIZONA	Kimsey, S. L.	JSC	Bartels, P. H.	NAS 9-14692	1105
59	UNIV OF ARIZONA	Vitale, J. A.	HQ-ET	Bier, M.	NSG 7333	1149
59	UNIV CALIF-BERKELEY	MacElroy, R. D.	ARC	Spear, R.	NCA 2-50710	1405
59	UNIV CALIF-SAN FRAN	Feller, D. D.	ARC	Searle, G. L.	NCA 2-665801	1578
59	UNIV CALIF-SAN FRAN	Keil, L. C.	ARC	Dallman, M. F.	NCA 2-665806	1582
59	UNIV CALIF-S BARBARA	Greenleaf, J. E.	ARC	Rochelle, R. H.	NCA 2-680802	1590
59	UNIV HOUSTON-HOUSTON	Tremor, J. W.	ARC	Cowles, J. R.	NAS 2-9987	3467
59	UNIV HOUSTON-HOUSTON	Sauer, R. L.	JSC	Cox, J. E.	NAS 9-11676	3468
59	UNIV ILLINOIS-URBANA	Melgares, E.	JSC	Voss, E. W.	NAS 9-15328	2066
59	UNIV OF LOUISVILLE	Hoffman, R. A.	JSC	Keefe, J. R.	NAS 9-15213	2218
59	UNIV MD-EASTRN SHORE	Trafford, G. H.	WFC	Lynk, W. L.	NSG 6017	2355
59	UNIV MICH-ANN ARBOR	Reschke, M. F.	JSC	Anderson, D. J.	NAS 9-15375	2594
59	U MINN-MNPLS-ST PAUL	Smith, M. C., Jr.	JSC	Mitchell, J. R.	NAS 9-12560	2646
59	UNIV MO-COLUMBIA	Quattrone, P. D.	ARC	Winnick, J.	NSG 2193	2706
59	UNIV N CAR-CHPL HILL	Leach, C. S.	JSC	Gitelman, H. J.	NAS 9-14697	3059
59	U OKLA-HLTH SCI CTR	Sandler, H.	ARC	Stone, H. L.	NSG 2312	3182
59	UNIV ORGEON-HLTH CTR	Scott, F. E.	MSFC	Knox, R. J.	NAS 8-32162	3205

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59	UNIV OF PITTSBURGH	Mah, R. W.	ARC	Gualtierierotti, T.	NAS 2-9871	3288
59	UNIV SAN FRANCISCO	Philpott, D. E.	ARC	Benton, E. V.	NAS 2-9845	1603
59	UNIV OF SANTA CLARA	Greenleaf, J. E.	ARC	Pefley, R. K.	NAS 2-9967	1611
59	UNIV TEXAS-GALVESTON	Leach, C. S.	JSC	Ziegler, M. G.	NAS 9-15565	3573
59	UNIV OF WASHINGTON	Rambaut, P. C.	JSC	Nelp, W. B.	NAS 9-13029	3761
59	UNIV OF WEST FLORIDA	Barnes, C. M.	JSC	Schaefer, H. J.	NAS 9-15417	1922
59	WRIGHT STATE UNIV	Daunton, N. G.	ARC	Crampton, G. H.	NCA 2-875801	3171
61	FLORIDA A&M UNIV	Winget, C. M.	ARC	Walker, C. A.	NCA 2-230701	1852
61	SAN JOSE STATE UNIV	Daunton, N. G.	ARC	Fox, R. A.	NCA 2-675801	1248
61	SAN JOSE STATE UNIV	Daunton, N. G.	ARC	Fox, R. A.	NCA 2-675808	1253
61	UNIV CALIF-BERKELEY	Cowings, P. S.	ARC	Strohman, R. C.	NCA 2-50803	1409
61	UNIV CALIF-L ANGELES	Ellis, S.	ARC	Parlow, A.	NCA 2-390801	1476
61	UNIV CALIF-SAN DIEGO	Winter, D. L.	ARC	Galambos, R.	NGR 05-009-083	1551
61	UNIV CALIF-SAN FRAN	Cowings, P. S.	ARC	Kamiya, J.	NCA 2-665810	1586
62	JOHNS HOPKINS UNIV	Patton, R. M.	ARC	Brady, J. V.	NGR 21-001-111	2258
62	UNIV OF SANTA CLARA	Connors, M. M.	ARC	Akins, F.	NCA 2-685805	1617
69	MASS INST OF TECH	Daunton, N. G.	ARC	Held, R. M.	NGL 22-009-308	2447
69	NO CAROLINA STATE U	Mayes, W. H.	LARC	Horvath, J. J.	NGL 34-002-095	3044
69	OHIO STATE UNIV	Dunn, R. S.	ARC	Gilson, R. D.	NSG 2179	3121
69	SAN JOSE STATE UNIV	Stewart, J. D.	ARC	Clark, B.	NSG 2269	1270
69	TUFTS UNIVERSITY	Palmer, E. A.	ARC	Chechile, R. A.	NCA 2-785801	2545
69	UNIV ALA-HUNTSVILLE	Tanner, T. A., Jr.	ARC	Rogers, J. G.	NSG 2058	1062
69	UNIV OF FLORIDA	Patton, R. M.	ARC	Webb, W. B.	NGR 10-005-057	1888
69	UNIV OREGON-EUGENE	Dunn, R. S.	ARC	Brenner, M.	NCA 2-587801	3200
69	UNIV TEXAS-AUSTIN	Patton, R. M.	ARC	Helmreich, R. L.	NSG 2065	3526
69	UNIV TEXAS-GALVESTON	Reschke, M. F.	JSC	Correia, M. J.	NAS 9-14641	3572
69	UNIV OF VIRGINIA	Deloach, R.	LARC	Jacobson, I. D.	NSG 1509	3700
72	ARIZONA STATE UNIV	Bifano, W. J.	LERC	Bahr, D. M.	DEN 3 50	1076
72	NEW YORK UNIVERSITY	Gray, E. Z.	HQ-ET	Morgenstern, O.	NSG 7169	2941
72	UNIV MARYLAND-COL PK	Alfonsi, P. J.	WFC	Harmon, D. M.	NSG 6010	2339
72	UNIV OF VIRGINIA	Rollins, R. H.	HQ-RX	Kuhlthau, A. R.	NSG 7266	3703
73	UNIV OF DAYTON	Hein, G. F.	LERC	Engler, N. A.	NAS 3-19699	3146
75	GEORGE WASHINGTON U	Wright, M. D.	HQ-AD	Logsdon, J. M.	NSG 7145	1815
75	GEORGE WASHINGTON U	Young, R. S.	HQ-SB	Unavailable	NASW 2890	1787
75	GEORGE WASHINGTON U	Halstead, T. W.	HQ-SB	Head, M. C.	NASW 3029	1788
75	STANFORD UNIVERSITY	Barnett, R. M.	ARC	Pederson, C. A.	NAS 2-8898	1285
79	SOUTHERN METHODIST U	Tanner, T. A., Jr.	ARC	Starling, J.	NSG 2006	3426
79	UNIV CALIF-BERKELEY	Tanner, T. A., Jr.	ARC	LaPorte, T. R.	NGR 05-003-471	1424
79	UNIV CALIF-DAVIS	Connors, M. M.	ARC	Harrison, A. A.	NCA 2-180803	1457
79	UNIV OF SANTA CLARA	Glazer, J. H.	ARC	Alexander, G.	NCA 2-685402	1612
99	BENNETT COLLEGE-NC	Pohly, J. G.	HQ-LU	Sayles, J. N.	NGT 34-017-001	3030
99	BOWIE STATE COLLEGE	Pohly, J. G.	HQ-LU	Kirksey, C. H.	NGT 21-027-012	2246
99	BROWN UNIVERSITY	Williams, T. S., Jr.	LARC	Mutch, T. A.	NAS 1-9680	3307
99	CAL STATE U-CHICO	Rich, W. B.	HQ-FE	Unavailable	NASW 2835	1216
99	CHICAGO STATE UNIV	Young, S. G.	LERC	Treptow, R. S.	NSG 3030	2008
99	COLLEGE OF WM & MARY	Anderson, A. F.	LARC	Aceto, H., Jr.	NAS 1-14972	3609
99	COLLEGE OF WM & MARY	Anderson, A. F.	LARC	Rublein, G. T.	NGL 47-006-058	3610
99	COLUMBIA UNIVERSITY	Jennings, N.	GSFC	Lewis, J. P.	NAS 5-24080	2852
99	CORNELL UNIVERSITY	Williams, T. S., Jr.	LARC	Sagan, C. E.	NAS 1-9683	2890
99	ESTRN SHORE CMTY COL	Milliner, J. B.	WFC	Unavailable	NAS 6-2707	3617
99	GEORGE WASHINGTON U	Jackson, H. D.	LERC	Wood, F. B.	NSG 3130	1812
99	GEORGETOWN UNIV	Puttkamer, J.	HQ-MT	Cheston, P. S.	NASW 3152	1816
99	GEORGIA INST OF TECH	Hall, J. B., Jr.	LARC	Wilkins, R. D.	NAS 1-14947	1932
99	HOWARD UNIVERSITY	Mundy, J. R.	GSFC	Cox, E. L.	NCA 5-21	1824
99	HOWARD UNIVERSITY	Carter, C. H.	HQ-LU	Fan, D. N.	NGT 09-011-060	1829
99	MASS INST OF TECH	Wempe, T. E.	ARC	Sheridan, T. B.	NSG 2118	2493
99	MASS INST OF TECH	Wempe, T. E.	ARC	Athans, M.	NSG 2180	2496
99	MASS INST OF TECH	Clark, T. A.	GSFC	Shapiro, I. I.	NGR 22-009-839	2475

NASA'S UNIVERSITY PROGRAM
APPENDIX B CROSS INDEX BY FIELD OF SCIENCE AND ENGINEERING

FIELD CODE	INSTITUTION	TECHNICAL OFFICER	TECH OFF LOC	FIRST PRINCIPAL INVESTIGATOR	GRANT/ CONTRACT NUMBER	ACC NO.
99	MASS INST OF TECH	Williams, T. S., Jr.	LARC	Shapiro, I. I.	NAS 1-9702	2410
99	MASS INST OF TECH	Carter, C. H.	HQ-LU	McCarthy, J. F., Jr.	NGL 22-009-638	2450
99	MOREHOUSE COLLEGE	Pohly, J. G.	HQ-LU	Hall, J.	NGT 11-008-004	1968
99	NM HIGHLANDS UNIV	Pohly, J. G.	HQ-LU	Zenick, H.	NGT 32-010-001	2803
99	OKLAHOMA STATE UNIV	Miller, S. A.	ARC	Wiggins, K. E.	NAS 2-9877	3174
99	OLD DOMINION UNIV	Anderson, A. F.	LARC	Maygarden, E. M.	NAS 1-14193	3630
99	PENN STATE U-UNIV PK	Golden, T. S.	GSFC	Feller, I. R.	NAS 5-24329	3243
99	PRATT INSTITUTE	Monroe, R.	HQ-U	Randall, J. T., Jr.	NASW 3142	2955
99	PRINCETON UNIVERSITY	Gilbreath, W.	ARC	O'Neill, G. K.	NSG 2062	2783
99	PURDUE UNIVERSITY	Maurer, H. E.	WFC	Anuta, P. E.	NAS 6-2816	2100
99	SAN FRAN STATE UNIV	Tomberlin, K. A.	ARC	Eisenberg, L.	NCA 2-660801	1240
99	SAN FRAN STATE UNIV	Gibbs, B. P.	ARC	Compesi, R.	NCA 2-660803	1242
99	SAN FRAN STATE UNIV	Billingham, J.	ARC	Seeger, C. S.	NSG 2210	1246
99	SAN JOSE STATE UNIV	Miller, S. A.	ARC	Brown, D. E.	NCA 2-675804	1250
99	SO DAKOTA STATE UNIV	Gordon, F., Jr.	GSFC	Moore, D.	NAS 5-24206	3328
99	SOUTHEASTN OKLA ST U	Bivins, R. G.	HQ-ET	Gold, C. H.	NASW 2881	3178
99	SOUTHEASTN OKLA ST U	Bivins, R. G.	HQ-ET	Gold, C. H.	NASW 3007	3179
99	SPELMAN COLLEGE	Pohly, J. G.	HQ-LU	Falconer, E.	NGT 11-013-001	1979
99	STANFORD UNIVERSITY	Hornby, H.	ARC	Rosenberg, N.	NCA 2-745815	1317
99	STANFORD UNIVERSITY	Williams, T. S., Jr.	LARC	Levinthal, E. C.	NAS 1-9682	1282
99	ST UNIV SYSTM OF FLA	Dolby, W.	HQ-ET	Unavailable	NASW 3060	1874
99	TENNESSEE STATE UNIV	Easley, R. E.	JSC	Sampson, C.	NAS 9-15441	3337
99	TEXAS A&M UNIVERSITY	Amsbury, D. L.	JSC	Whitehorn, N.	NAS 9-15468	3446
99	TEXAS A&M UNIVERSITY	Eason, R.	JSC	Shepard, P.	NAS 9-15539	3447
99	TUFTS UNIVERSITY	Wempe, T. E.	ARC	Kreifeldt, J. G.	NSG 2156	2546
99	UNIV ALA-HUNTSVILLE	Decher, R.	MSFC	Hendricks, J. B.	NAS 8-29316	1046
99	UNIV CALIF-BERKELEY	Billingham, J.	ARC	Welch, W. J.	NSG 2271	1435
99	UNIV CALIF-BERKELEY	Carter, C. H.	HQ-LU	Anderson, K. A.	NGL 05-003-497	1417
99	HASTINGS COL OF LAW	Glazer, J. H.	ARC	Wolcott, T.	NCA 2-280801	1233
99	UNIV OF CHICAGO	Carter, C. H.	HQ-LU	Simpson, J. A.	NGL 14-001-258	2041
99	UNIV OF CHILE	Lafleur, W.	GSFC	Danyau, C. R.	NAS 5-1925	3855
99	UNIV OF CONNECTICUT	Bivins, R. G.	HQ-ET	Wilde, D.	NASW 3059	1753
99	UNIV OF CONNECTICUT	Bivins, R. G.	HQ-ET	Unavailable	NASW 3191	1754
99	UNIV OF DENVER	Ault, L. A.	HQ-ET	Johnson, F. D.	NASW 2892	1737
99	UNIV OF DENVER	Ault, L. A.	HQ-ET	Unavailable	NASW 3021	1739
99	UNIV OF DENVER	Ault, L. A.	HQ-ET	Johnson, F. D.	NASW 3113	1740
99	UNIV OF GEORGIA	Harrison, J. O.	HQ-ET	Unavailable	NASW 2948	1980
99	UNIV OF HAWAII-MANOA	Nishioka, K.	ARC	Abramson, N.	NCA 2-285801	1986
99	UNIV ILLINOIS-URBANA	Palmer, E. A.	ARC	Rouse, W. B.	NSG 2119	2077
99	UNIV OF KENTUCKY	Dolby, W.	HQ-ET	Unavailable	NASW 3039	2208
99	UNIV MD-EASTRN SHORE	Floyd, J. C.	WFC	Smith, J. C.	NAS 6-2855	2351
99	UNIV MD-EASTRN SHORE	Oberholtzer, J. D.	WFC	Wutoh, J. G.	NSG 6006	2353
99	U MINN-MNPLS-ST PAUL	Carter, C. H.	HQ-LU	Anderson, G. W.	NGT 24-005-078	2653
99	UNIV OF NEW MEXICO	Bivins, R. G.	HQ-ET	Unavailable	NASW 2936	2824
99	UNIV OF PITTSBURGH	Bivins, R. G.	HQ-ET	Unavailable	NASW 3042	3291
99	UNIV OF SOUTHERN CAL	Holley, H. L.	HQ-ET	Unavailable	NASW 2771	1634
99	UNIV OF SOUTHERN CAL	Gilbert, R.	HQ-ET	Unavailable	NASW 3009	1635
99	UNIV OF SOUTHERN CAL	Bivins, R. G.	HQ-ET	Munushan, J.	NASW 3031	1636
99	UNIV TEXAS-DALLAS	Carter, C. H.	HQ-LU	Johnson, F. S.	NGL 44-004-130	3559
99	UNIV OF VIRGINIA	Martin, D. J.	LARC	Barnes, D. W.	NAS 1-12754	3681
99	VIRGINIA POLY INST	Anderson, A. F.	LARC	Unavailable	NAS 1-15080	3711

NASA'S UNIVERSITY PROGRAM
APPENDIX C
CROSS INDEX BY FIRST TECHNICAL OFFICER LOCATION

Technical Officers are usually located at the NASA installation funding a particular grant or contract. There may be a second technical officer, shown in the citation, at the same or a different installation. Abbreviations used for locations are: ARC, Ames Research Center; DFRC, Dryden Flight Research Center; GSFC, Goddard Space Flight Center; KSC, Kennedy Space Center, JSC, Johnson Space Center; LARC, Langley Research Center; LERC, Lewis Research Center; MSFC, Marshall Space Flight Center; National Space Technology Laboratories, NSTL; WFC, Wallops Flight Center and HQ, Headquarters. The HQ designator carries suffixed letters identifying individual Headquarters offices; an explanation of these identifiers and full addresses for all installations may be found in the prefatory pages. The key for the "Field Code" column is in Appendix B.

TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	GRANT/ CONTRACT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
ARC	Buell, D. A.	ADELPHI UNIVERSITY	NSG 2088	Steinmetz, W. J.	12	2835
ARC	Pollock, G. E.	ARIZONA STATE UNIV	NCA 2-35702	Yuen, G. U.	12	1081
ARC	Pollack, J. B.	ARIZONA STATE UNIV	NCA 2-35801	Krinsley, D.	32	1082
ARC	Black, D. C.	ARIZONA STATE UNIV	NCA 2-35802	Greeley, R.	32	1083
ARC	Black, D. C.	ARIZONA STATE UNIV	NSG 2284	Greeley, R.	19	1085
ARC	Hall, C. F.	BRIGHAM YOUNG UNIV	NAS 2-7358	Jones, D. E.	13	3580
ARC	Hall, C. F.	CALIF INST OF TECH	NAS 2-6556	Munch, G.	11	1162
ARC	Haughney, L. C.	CALIF INST OF TECH	NGR 05-002-281	Werner, M. W.	11	1187
ARC	Pollack, J. B.	CALIF INST OF TECH	NSG 2229	Yung, Y. L.	31	1194
ARC	Pollack, J. B.	CALIF INST OF TECH	NSG 2283	Yung, Y. L.	31	1195
ARC	Boese, R. W.	CAL STATE U-FULLERTN	NCA 2-253701	Nanes, R.	13	1218
ARC	Tobias, L.	CAL STATE U-FULLERTN	NCA 2-253801	Dear, R. G.	22	1219
ARC	Pollock, G. E.	CAL STATE U-HAYWARD	NCA 2-290704	Warnke, D. A.	32	1221
ARC	Greenleaf, J. E.	CAL STATE U-HAYWARD	NCA 2-290801	Brock, P. J.	59	1222
ARC	Hochstein, L. I.	CAL STATE U-L ANGLES	NSG 2199	Andreoli, A. J.	51	1223
ARC	Quattrone, P. D.	CASE WESTERN RESERVE	NGR 36-027-050	Yeager, E.	12	3068
ARC	Bunch, T. E.	CHICAGO STATE UNIV	NSG 2188	Methot, R. L.	32	2007
ARC	Whitten, R. C.	CLARK COLLEGE	NSG 2143	Walker, G. H.	31	1924
ARC	Steger, J. L.	COLORADO STATE UNIV	NCA 2-165801	Thomas, J. W.	21	1656
ARC	Murphy, J. D.	COLORADO STATE UNIV	NCA 2-165901	Prenter, P. M.	21	1657
ARC	Holton, E. M.	COLORADO STATE UNIV	NSG 2232	Jordan, J. P.	51	1665
ARC	Shimazaki, T.	COLORADO STATE UNIV	NSG 2253	Reiter, E. R.	31	1666
ARC	Billman, K. W.	COLORADO STATE UNIV	NSG 2287	She, C. Y.	13	1667
ARC	Pollack, J. B.	CORNELL UNIVERSITY	NCA 2-175801	Burns, J. A.	11	2895
ARC	Haughney, L. C.	CORNELL UNIVERSITY	NGR 33-010-081	Houck, J. R.	11	2899
ARC	Cameron, R. M.	CORNELL UNIVERSITY	NGR 33-010-146	Harwit, M. O.	11	2902
ARC	Cameron, R. M.	CORNELL UNIVERSITY	NGR 33-010-182	Houck, J. R.	11	2905
ARC	Nelson, H. G.	CORNELL UNIVERSITY	NSG 2078	Johnson, H. H.	47	2910
ARC	Haughney, L. C.	CORNELL UNIVERSITY	NSG 2174	Elliot, J. L.	11	2911
ARC	Gillespie, C. M., Jr.	CORNELL UNIVERSITY	NSG 2262	Harwit, M. O.	11	2912
ARC	Yu, Y. H.	CORNELL UNIVERSITY	NSG 2331	George, A. R.	41	2913
ARC	Danellis, J. V.	CORNELL UNIV-MED CTR	NSG 2259	Reis, D. J.	59	2924
ARC	Holton, E. M.	EMORY UNIVERSITY	NGL 11-001-009	Popovic, V. P.	51	1926
ARC	Sandler, H.	EMORY UNIVERSITY	NGR 11-001-016	Bourne, G. H.	51	1927
ARC	Daunton, N. G.	EMORY UNIVERSITY	NGR 11-001-045	Perachio, A. A.	59	1928
ARC	Winget, C. M.	FLORIDA A&M UNIV	NCA 2-230701	Walker, C. A.	61	1852
ARC	Winget, C. M.	FLORIDA A&M UNIV	NSG 2029	Walker, C. A.	59	1854
ARC	Winget, C. M.	FLORIDA A&M UNIV	NSG 2183	Soliman, K. F.	59	1855
ARC	Klein, H. P.	FLORIDA A&M UNIV	NSG 2311	Tolbert, M. E.	51	1856
ARC	Keil, L. C.	GEORGETOWN UNIV	NCA 2-258701	Kellar, K. J.	53	1817

NASA'S UNIVERSITY PROGRAM
APPENDIX C CROSS INDEX BY TECHNICAL OFFICER LOCATION

TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	GRANT/ CONTRACT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
ARC	Ragent, B.	GEORGIA INST OF TECH	NSG 2306	Grams, G. W.	31	1955
ARC	Quattrone, P. D.	GEORGIA INST OF TECH	NSG 2323	Carden, J. L.	59	1956
ARC	Hall, C. F.	HARVARD UNIVERSITY	NAS 2-9127	Goody, R. M.	11	2368
ARC	Ellis, S. E.	HARVARD UNIVERSITY	NSG 2144	Goldberg, A. L.	51	2388
ARC	Doolin, B. F.	HARVARD UNIVERSITY	NSG 2265	Brockett, R. W.	41	2389
ARC	Luebs, A. B.	HARVEY MUDD COLLEGE	NCA 2-283801	Williams, H.	41	1232
ARC	Sandler, H.	HOWARD UNIVERSITY	NGL 09-011-017	Cothran, L. N.	53	1825
ARC	Lamb, D. R.	HUMBOLDT STATE UNIV	NSG 2244	Hankins, D.	19	1234
ARC	Chang, S.	INDIANA U-BLOOMINGTN	NCA 2-335702	Hayes, [illegible] M.	12	2091
ARC	Kutler, P.	IOWA STATE UNIV	NCA 2-340704	Anderson, D. A.	49	2129
ARC	Kutler, P.	IOWA STATE UNIV	NCA 2-340705	Pierson, B. L.	49	2130
ARC	Steger, J. L.	IOWA STATE UNIV	NCA 2-340706	Tannehill, J. C.	21	2131
ARC	Pollack, J. B.	IOWA STATE UNIV	NCA 2-340801	Grossman, A. S.	13	2132
ARC	Pollack, J. B.	IOWA STATE UNIV	NCA 2-340802	Iversen, J. D.	49	2133
ARC	Presley, L. L.	IOWA STATE UNIV	NCA 2-340901	Cook, W. J.	46	2134
ARC	Rakich, J. V.	IOWA STATE UNIV	NGR 16-002-038	Tannehill, J. C.	41	2135
ARC	Rossow, V. J.	IOWA STATE UNIV	NSG 2040	Iversen, J. D.	41	2140
ARC	Malcolm, G. N.	IOWA STATE UNIV	NSG 2091	James, W. D.	41	2141
ARC	Olson, L. E.	IOWA STATE UNIV	NSG 2257	James, W. D.	41	2142
ARC	Sebesta, P. D.	JOHNS HOPKINS UNIV	NAS 2-9300	Ray, G. C.	59	2249
ARC	Patton, R. M.	JOHNS HOPKINS UNIV	NGR 21-001-111	Brady, J. V.	62	2258
ARC	Rubesin, M. W.	JOHNS HOPKINS UNIV	NSG 2303	Corrsin, S.	41	2260
ARC	Danellis, J. V.	JOHNS HOPKINS UNIV	NSG 2324	Gann, D. S.	52	2261
ARC	Quattrone, P. D.	KENT STATE UNIV-KENT	NSG 2013	Madey, R.	12	3101
ARC	Boese, R. W.	LEHIGH UNIVERSITY	NCA 2-380801	Lovejoy, R. W.	12	3229
ARC	Hall, C. F.	MASS INST OF TECH	NAS 2-9473	Pettengill, G. H.	11	2414
ARC	Hall, C. F.	MASS INST OF TECH	NAS 2-9476	Pettengill, G. H.	11	2415
ARC	Hall, C. F.	MASS INST OF TECH	NAS 2-9483	Shapiro, I. I.	11	2416
ARC	MacElroy, R. D.	MASS INST OF TECH	NCA 2-425801	Rich, A.	51	2441
ARC	Daunton, N. G.	MASS INST OF TECH	NCA 2-425802	Hein, A.	51	2442
ARC	Doolin, B. F.	MASS INST OF TECH	NGL 22-009-124	Athans, M.	49	2445
ARC	Daunton, N. G.	MASS INST OF TECH	NGL 22-009-308	Held, R. M.	69	2447
ARC	Winget, C. M.	MASS INST OF TECH	NGR 22-009-627	Wurtman, R. J.	53	2460
ARC	Quattrone, P. D.	MASS INST OF TECH	NGR 22-009-723	Reid, R. C.	12	2464
ARC	Quattrone, P. D.	MASS INST OF TECH	NGR 22-009-766	Steinfeld, J. I.	12	2469
ARC	Daunton, N. G.	MASS INST OF TECH	NGR 22-009-798	Bizzi, E.	51	2472
ARC	Daunton, N. G.	MASS INST OF TECH	NGR 22-009-826	Nauta, W. J.	51	2474
ARC	Poppoff, I. G.	MASS INST OF TECH	NSG 2010	Prinn, R. G.	31	2491
ARC	Daunton, N. G.	MASS INST OF TECH	NSG 2032	Young, L. R.	59	2492
ARC	Wempe, T. E.	MASS INST OF TECH	NSG 2118	Sheridan, T. B.	99	2493
ARC	Johnson, W. R.	MASS INST OF TECH	NSG 2142	Widnall, S. E.	41	2494
ARC	Haughney, L. C.	MASS INST OF TECH	NSG 2172	Kleinman, S. G.	11	2495
ARC	Wempe, T. E.	MASS INST OF TECH	NSG 2180	Athans, M.	99	2496
ARC	Poppoff, L. G.	MASS INST OF TECH	NSG 2196	Alyea, F.	31	2497
ARC	Stewart, J. D.	MASS INST OF TECH	NSG 2230	Young, L. R.	49	2498
ARC	Gillespie, C. M., Jr.	MASS INST OF TECH	NSG 2263	Wright, E. L.	11	2499
ARC	Johnson, W. R.	MASS INST OF TECH	NSG 2266	Ham, N. D.	41	2500
ARC	Quattrone, P. D.	MASS INST OF TECH	NSG 2334	Karel, M.	59	2501
ARC	Quattrone, P. D.	MASS INST OF TECH	NSG 2335	Meissner, H. P.	59	2502
ARC	Hall, C. F.	NEW YORK UNIVERSITY	NAS 2-7963	Weinberg, J. L.	11	2926
ARC	Hicks, R. M.	NEW YORK UNIVERSITY	NGR 33-016-201	Garabedian, P. R.	41	2932
ARC	Belsley, S. E.	NORTHWESTERN UNIV	NSG 2149	Spencer, F. A.	41	2018
ARC	Belsley, S. E.	NORTHWESTERN UNIV	NSG 2328	Spencer, F. A.	41	2019
ARC	Galloway, T. L.	OHIO STATE UNIV	NAS 2-9714	Gregorek, G. M.	41	3107
ARC	Steger, J. L.	OHIO STATE UNIV	NCA 2-565801	Nakamura, S.	46	3112
ARC	Billingham, J.	OHIO STATE UNIV	NSG 2162	Kraus, J. D.	45	3119
ARC	Boese, R. W.	OHIO STATE UNIV	NSG 2175	Rao, K. N.	13	3120
ARC	Dunn, R. S.	OHIO STATE UNIV	NSG 2179	Gilson, R. D.	69	3121

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ARC	Mehler, W. R.	OHIO STATE UNIV	NSG 2220	Lim, D. J.	51	3122
ARC	Hicks, T. M.	OHIO STATE UNIV	NSG 2296	Gregorek, G. M.	41	3123
ARC	McDevitt, J. B.	OHIO STATE UNIV	NSG 2298	Korkan, K. D.	41	3124
ARC	Miller, S. A.	OKLAHOMA STATE UNIV	NAS 2-9877	Wiggins, K. E.	99	3174
ARC	Steinle, F. W., Jr.	OKLAHOMA STATE UNIV	NCA 2-575701	Tiederman, W. G.	41	3175
ARC	Keil, L. C.	PENN STATE U-UNIV PK	NSG 2122	Severs, W. B.	53	3263
ARC	Fewell, L. L.	PENN STATE U-UNIV PK	NSG 2241	Allcock, H. R.	12	3264
ARC	Fohlen, G. M.	POLY INST OF NY	NSG 2147	Wrong, I. M.	12	2951
ARC	Riccitiello, S. R.	POLY INST OF NY	NSG 2182	Pearce, E. M.	12	2952
ARC	Smith, G. A.	PRINCETON UNIVERSITY	NGR 31-001-277	Dukes, T. A.	41	2780
ARC	Gilbreath, W.	PRINCETON UNIVERSITY	NSG 2062	O'Neill, G. K.	99	2783
ARC	Horstman, C. C.	PRINCETON UNIVERSITY	NSG 2114	Bogdonoff, S. M.	41	2784
ARC	Davis, S. S.	PRINCETON UNIVERSITY	NSG 2194	Dowell, E. H.	41	2785
ARC	Horstman, C. C.	PRINCETON UNIVERSITY	NSG 2299	Settles, G. S.	41	2786
ARC	Gregory, T. J.	PURDUE UNIVERSITY	NSG 2192	Anderson, D. C.	22	2110
ARC	Ramos, R.	RENSSELAER POLY-NY	NAS 2-10006	Modestino, J. W.	31	2957
ARC	Black, D. C.	SAN FRAN STATE UNIV	NCA 2-660703	Hagar, C.	13	1238
ARC	Klein, H. P.	SAN FRAN STATE UNIV	NCA 2-660704	Burns, J. A.	59	1239
ARC	Tomberlin, K. A.	SAN FRAN STATE UNIV	NCA 2-660801	Eisenberg, L.	99	1240
ARC	Lawless, J. G.	SAN FRAN STATE UNIV	NCA 2-660802	Orenberg, J. B.	12	1241
ARC	Gibbs, B. P.	SAN FRAN STATE UNIV	NCA 2-660803	Compesi, R.	99	1242
ARC	Lawless, J. G.	SAN FRAN STATE UNIV	NCA 2-660804	Buttlaire, D. H.	12	1243
ARC	Lawless, J. G.	SAN FRAN STATE UNIV	NCA 2-660805	Orenberg, J. B.	12	1244
ARC	Barnes, A.	SAN FRAN STATE UNIV	NCA 2-660806	Kilpatrick, T.	13	1245
ARC	Billingham, J.	SAN FRAN STATE UNIV	NSG 2210	Seeger, C. S.	99	1246
ARC	Oyama, J.	SAN FRAN STATE UNIV	NSG 2281	Kakihana, R.	59	1247
ARC	Daunton, N. G.	SAN JOSE STATE UNIV	NCA 2-675801	Fox, R. A.	61	1248
ARC	Flores, J. J.	SAN JOSE STATE UNIV	NCA 2-675803	Koenig, I.	12	1249
ARC	Miller, S. A.	SAN JOSE STATE UNIV	NCA 2-675804	Brown, D. E.	99	1250
ARC	Altman, R. L.	SAN JOSE STATE UNIV	NCA 2-675806	Ling, A. C.	12	1251
ARC	Altman, R. L.	SAN JOSE STATE UNIV	NCA 2-675807	Mayer, L. A.	12	1252
ARC	Daunton, N. G.	SAN JOSE STATE UNIV	NCA 2-675808	Fox, R. A.	61	1253
ARC	Whitten, R. C.	SAN JOSE STATE UNIV	NCA 2-675809	Riegel, C. A.	31	1254
ARC	Oyama, V. I.	SAN JOSE STATE UNIV	NCA 2-675810	Ling, A. C.	12	1255
ARC	Wydeven, T. J.	SAN JOSE STATE UNIV	NGR 05-046-011	Spitze, L. A.	12	1256
ARC	Pollack, J. B.	SAN JOSE STATE UNIV	NSG 2047	Riegel, C. A.	11	1257
ARC	Wydeven, T. J.	SAN JOSE STATE UNIV	NSG 2066	Spitze, L. A.	12	1258
ARC	Klein, H. P.	SAN JOSE STATE UNIV	NSG 2090	Neptune, J. A.	51	1259
ARC	Whitten, R. C.	SAN JOSE STATE UNIV	NSG 2130	Riegel, C. A.	31	1260
ARC	Rosser, R. W.	SAN JOSE STATE UNIV	NSG 2186	Neptune, J. A.	12	1261
ARC	Fohlen, G. M.	SAN JOSE STATE UNIV	NSG 2209	Ling, A. C.	12	1262
ARC	Dalton, B. P.	SAN JOSE STATE UNIV	NSG 2213	Ballard, R. W.	51	1263
ARC	Fish, R. H.	SAN JOSE STATE UNIV	NSG 2219	Myronuk, D. J.	12	1264
ARC	Mansfield, J. A.	SAN JOSE STATE UNIV	NSG 2224	Holmstrom, F.	49	1265
ARC	Mansfield, J. A.	SAN JOSE STATE UNIV	NSG 2235	Anderson, R.	49	1266
ARC	Blanchard, M. B.	SAN JOSE STATE UNIV	NSG 2236	Anderson, D. W.	32	1267
ARC	Wrigley, R. C.	SAN JOSE STATE UNIV	NSG 2239	Broenkow, W. W.	33	1268
ARC	Wydeven, T. J.	SAN JOSE STATE UNIV	NSG 2247	Acrivos, J.	12	1269
ARC	Stewart, J. D.	SAN JOSE STATE UNIV	NSG 2269	Clark, B.	69	1270
ARC	Rosser, R. W.	SAN JOSE STATE UNIV	NSG 2273	Ling, A. C.	12	1271
ARC	Heimbuch, A. H.	SAN JOSE STATE UNIV	NSG 2274	Ling, A. C.	12	1272
ARC	Williams, B. A.	SAN JOSE STATE UNIV	NSG 2293	Lund, G. F.	51	1273
ARC	Heimbuch, A. H.	SAN JOSE STATE UNIV	NSG 2302	Ling, A. C.	12	1274
ARC	Nishioka, K.	SAN JOSE STATE UNIV	NSG 2305	Ling, A. C.	39	1275
ARC	Mansfield, J. A.	SAN JOSE STATE UNIV	NSG 2307	Holmstrom, F.	46	1276
ARC	Swan, P. R.	SAN JOSE STATE UNIV	NSG 2314	Bornstein, R. D.	31	1277
ARC	Woeller, F. H.	SAN JOSE STATE UNIV	NSG 2315	Mayer, L. A.	31	1278
ARC	Mansfield, J. A.	SAN JOSE STATE UNIV	NSG 2332	Anderson, R. N.	47	1279

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ARC	Suri, K. P.	SAN JOSE STATE UNIV	NSG 2339	Fox, R. A.	51	1280
ARC	Bunch, T. E.	SONOMA STATE COL	NCA 2-720701	Vennum, W.	32	1281
ARC	Callas, G. P.	SO ILL UNIV-CARBONDL	NSG 2238	McCalla, T. M.	21	2026
ARC	Tanner, T. A., Jr.	SOUTHERN METHODIST U	NSG 2006	Starling, J.	79	3426
ARC	Sandler, H.	SO UNIV-BATON ROUGE	NSG 2041	Ray, G. C.	59	2230
ARC	Barnett, R. M.	STANFORD UNIVERSITY	NAS 2-8898	Pederson, C. A.	75	1285
ARC	Denery, D. G.	STANFORD UNIVERSITY	NAS 2-9083	DeBra, D. B.	41	1286
ARC	Danellis, J. V.	STANFORD UNIVERSITY	NCA 2-745706	Barchas, J. D.	51	1305
ARC	Holton, E. M.	STANFORD UNIVERSITY	NCA 2-745709	Feldman, D.	53	1306
ARC	Caroff, L. J.	STANFORD UNIVERSITY	NCA 2-745715	Petrosian, V.	13	1307
ARC	Whiting, E. E.	STANFORD UNIVERSITY	NCA 2-745717	Boudart, M.	13	1308
ARC	Hochstein, L.	STANFORD UNIVERSITY	NCA 2-745719	Matin, A.	51	1309
ARC	MacElroy, R. D.	STANFORD UNIVERSITY	NCA 2-745721	Loew, G. B.	51	1310
ARC	Mandel, A. D.	STANFORD UNIVERSITY	NCA 2-745801	Merigan, T.	53	1311
ARC	Holton, E. M.	STANFORD UNIVERSITY	NCA 2-745802	Feldman, D.	53	1312
ARC	Whiting, E. E.	STANFORD UNIVERSITY	NCA 2-745803	Spicer, W. E.	47	1313
ARC	Young, D. R.	STANFORD UNIVERSITY	NCA 2-745804	Nagel, D. C.	53	1314
ARC	Whiting, E. E.	STANFORD UNIVERSITY	NCA 2-745807	Pound, G. M.	47	1315
ARC	Barnes, A.	STANFORD UNIVERSITY	NCA 2-745811	Tyler, G. L.	11	1316
ARC	Hornby, H.	STANFORD UNIVERSITY	NCA 2-745815	Rosenberg, N.	99	1317
ARC	Erzberger, H.	STANFORD UNIVERSITY	NGL 05-020-007	Bryson, A. E., Jr.	49	1318
ARC	Sandler, H.	STANFORD UNIVERSITY	NGL 05-020-305	Harrison, D. C.	52	1325
ARC	Chang, S.	STANFORD UNIVERSITY	NGR 05-020-405	Loew, G. H.	12	1329
ARC	Mehler, W. R.	STANFORD UNIVERSITY	NGR 05-020-435	Chow, K. L.	59	1330
ARC	Danellis, J. V.	STANFORD UNIVERSITY	NGR 05-020-456	Luetscher, J. A.	52	1332
ARC	Sandler, H.	STANFORD UNIVERSITY	NGR 05-020-615	Meindl, J. D.	53	1334
ARC	Rubesin, M. W.	STANFORD UNIVERSITY	NGR 05-020-622	Reynolds, W. C.	47	1335
ARC	Sandler, H.	STANFORD UNIVERSITY	NGR 05-020-634	Ream, A. K.	52	1336
ARC	Carle, G. C.	STANFORD UNIVERSITY	NGR 05-020-690	Angell, J.	53	1339
ARC	Goldstein, H. E.	STANFORD UNIVERSITY	NGR 05-020-710	Bates, C.	46	1340
ARC	Snyder, C. T.	STANFORD UNIVERSITY	NSG 2007	Karamcheti, K.	19	1347
ARC	Sandler, H.	STANFORD UNIVERSITY	NSG 2020	Popp, R. L.	52	1348
ARC	Howe, J. T.	STANFORD UNIVERSITY	NSG 2085	Rana, D. S.	42	1349
ARC	Young, D. R.	STANFORD UNIVERSITY	NSG 2092	Steele, C. R.	53	1350
ARC	Franklin, J. A.	STANFORD UNIVERSITY	NSG 2100	DeBra, D. B.	41	1351
ARC	Billingham, J.	STANFORD UNIVERSITY	NSG 2121	Peterson, A. M.	49	1352
ARC	Sandler, H.	STANFORD UNIVERSITY	NSG 2132	Harrison, D. C.	52	1353
ARC	Nachtsheim, P. R.	STANFORD UNIVERSITY	NSG 2166	Baganoff, D.	42	1354
ARC	Galloway, T. L.	STANFORD UNIVERSITY	NSG 2190	Shevell, R. S.	41	1355
ARC	Belsley, S. E.	STANFORD UNIVERSITY	NSG 2203	Dajani, J. S.	41	1356
ARC	Sandler, H.	STANFORD UNIVERSITY	NSG 2214	Popp, R. L.	45	1357
ARC	Soderman, P. T.	STANFORD UNIVERSITY	NSG 2215	Karamcheti, K.	19	1358
ARC	Chapman, G. T.	STANFORD UNIVERSITY	NSG 2233	Karamcheti, K.	41	1359
ARC	Lorell, K. R.	STANFORD UNIVERSITY	NSG 2246	Powell, J. D.	49	1360
ARC	Whiting, E. E.	STANFORD UNIVERSITY	NSG 2249	Heinemann, K.	13	1361
ARC	Arnold, J. O.	STANFORD UNIVERSITY	NSG 2251	Pound, G. M.	47	1362
ARC	Schmitz, F. H.	STANFORD UNIVERSITY	NSG 2254	Karamcheti, K.	39	1363
ARC	Peterson, V. L.	STANFORD UNIVERSITY	NSG 2255	Karamcheti, K.	41	1364
ARC	McCroskey, W. J.	STANFORD UNIVERSITY	NSG 2258	Reynolds, W. C.	41	1365
ARC	Poppa, H. R.	STANFORD UNIVERSITY	NSG 2285	Pound, G. M.	13	1366
ARC	McKenzie, R. L.	STANFORD UNIVERSITY	NSG 2289	Byer, R. L.	13	1367
ARC	Billman, K. W.	STANFORD UNIVERSITY	NSG 2292	Pantell, R. H.	13	1368
ARC	Danellis, J. V.	STANFORD UNIVERSITY	NSG 2294	Harrison, D. C.	53	1369
ARC	Nagel, D. C.	STANFORD UNIVERSITY	NSG 2297	Karamcheti, K.	41	1370
ARC	Chapman, G. T.	STANFORD UNIVERSITY	NSG 2308	Karamcheti, K.	41	1371
ARC	Hickey, D. H.	STANFORD UNIVERSITY	NSG 2317	Karamcheti, K.	41	1372
ARC	Wright, R. H.	STANFORD UNIVERSITY	NSG 2322	Suppes, P.	41	1373
ARC	Arnold, J. O.	STANFORD UNIVERSITY	NSG 2326	Heinemann, K.	47	1374

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ARC	Boese, R. W.	STATE U NY-STONY BRK	NCA 2-760801	Lutz, B. L.	19	2995
ARC	Cameron, R. M.	STATE U NY-STONY BRK	NSG 2264	Simon, M.	11	3003
ARC	Leon, H. A.	ST U NY-UPST MED CTR	NCA 2-765801	Landaw, S. A.	53	3017
ARC	Whitten, R. C.	TALLADEGA COLLEGE	NSG 2217	Morrison, R. A.	13	1032
ARC	Mateer, G. G.	TEL-AVIV UNIVERSITY	NSG 7311	Brosh, A.	41	3861
ARC	Wong, J. T.	TEXAS A&M UNIVERSITY	NSG 2226	Foster, J. W.	41	3453
ARC	Holton, E. M.	TEXAS TECH UNIV	NSG 2137	Kenny, A. D.	51	3464
ARC	Palmer, E. A.	TUFTS UNIVERSITY	NCA 2-785801	Chechile, R. A.	69	2545
ARC	Wempe, T. E.	TUFTS UNIVERSITY	NSG 2156	Kreifeldt, J. G.	99	2546
ARC	MacElroy, R. D.	TULANE UNIVERSITY	NCA 2-800801	Johnson, E. J.	51	2236
ARC	Mehler, W. R.	TULANE UNIVERSITY	NSG 2139	Brizzee, K. R.	53	2237
ARC	Philpott, D. E.	TUSKEGEE INSTITUTE	NSG 2330	Sapp, W. J.	51	1036
ARC	Grant, T. L.	UNIV OF LEIDEN	NSG 7264	VanDerLaan, H.	11	3862
ARC	Tanner, T. A., Jr.	UNIV ALA-HUNTSVILLE	NSG 2058	Rogers, J. G.	69	1062
ARC	Hall, C. F.	UNIV OF ARIZONA	NAS 2-6265	Gehrels, A. M.	11	1095
ARC	Hall, C. F.	UNIV OF ARIZONA	NAS 2-9486	Tomasko, M. G.	11	1096
ARC	Hall, C. F.	UNIV OF ARIZONA	NAS 2-9487	Hunten, D. M.	31	1097
ARC	Gillespie, C. M., Jr.	UNIV OF ARIZONA	NGR 03-002-332	Harper, H. P.	11	1120
ARC	Haughney, L. C.	UNIV OF ARIZONA	NGR 03-002-390	Hoffman, W. F.	11	1124
ARC	Ballhaus, W. F.	UNIV OF ARIZONA	NSG 2112	Seebass, A. R.	41	1125
ARC	Billingham, J.	UNIV OF ARIZONA	NSG 2205	Serkowski, K. M.	11	1126
ARC	Quattrone, P. D.	UNIV OF ARIZONA	NSG 2309	Phillips, J. M.	59	1127
ARC	Ragent, B.	UNIV ARKANSAS-FAYETV	NGL 04-001-007	Testerman, M. K.	41	1158
ARC	Ellis, S.	UNIV CALIF-BERKELEY	NCA 2-50703	Nicholl, C.	53	1402
ARC	Linlor, W. I.	UNIV CALIF-BERKELEY	NCA 2-50704	Angelakos, D. J.	39	1403
ARC	Poppa, H. R.	UNIV CALIF-BERKELEY	NCA 2-50705	Bier, M.	13	1404
ARC	MacElroy, R. D.	UNIV CALIF-BERKELEY	NCA 2-50710	Spear, R.	59	1405
ARC	Caroff, L. J.	UNIV CALIF-BERKELEY	NCA 2-50711	Silk, J. I.	11	1406
ARC	Lanyi, J. K.	UNIV CALIF-BERKELEY	NCA 2-50801	Packer, L.	51	1407
ARC	Pollack, J. B.	UNIV CALIF-BERKELEY	NCA 2-50802	Cuzzi, J. N.	31	1408
ARC	Cowings, P. S.	UNIV CALIF-BERKELEY	NCA 2-50803	Strohman, R. C.	61	1409
ARC	Chapman, G. T.	UNIV CALIF-BERKELEY	NGR 05-003-451	Holt, M.	41	1421
ARC	Tanner, T. A., Jr.	UNIV CALIF-BERKELEY	NGR 05-003-471	LaPorte, T. R.	79	1424
ARC	Haughney, L. C.	UNIV CALIF-BERKELEY	NGR 05-003-511	Townes, C. H.	11	1425
ARC	Kourtides, D. A.	UNIV CALIF-BERKELEY	NSG 2026	Williamson, R. B.	44	1430
ARC	Belsley, S. E.	UNIV CALIF-BERKELEY	NSG 2127	Kanafani, A.	41	1431
ARC	Billman, K. W.	UNIV CALIF-BERKELEY	NSG 2151	Gustafson, T. K.	13	1432
ARC	Bauer, E.	UNIV CALIF-BERKELEY	NSG 2207	Colwell, R. N.	39	1433
ARC	Padrick, B. D.	UNIV CALIF-BERKELEY	NSG 2243	Colwell, R. N.	19	1434
ARC	Billingham, J.	UNIV CALIF-BERKELEY	NSG 2271	Welch, W. J.	99	1435
ARC	Vorreiter, J. W.	UNIV CALIF-BERKELEY	NSG 2280	Richards, P. L.	11	1436
ARC	Greenleaf, J. E.	UNIV CALIF-DAVIS	NCA 2-180703	Bernauer, E. M.	53	1456
ARC	Connors, M. M.	UNIV CALIF-DAVIS	NCA 2-180803	Harrison, A. A.	79	1457
ARC	Pollack, J. B.	UNIV CALIF-DAVIS	NCA 2-180804	White, B. R.	46	1458
ARC	Oyama, J.	UNIV CALIF-DAVIS	NGL 05-004-008	Smith, A. H.	51	1459
ARC	Oyama, J.	UNIV CALIF-DAVIS	NSG 2234	Horowitz, B. A.	51	1460
ARC	Marvin, J. G.	UNIV CALIF-DAVIS	NSG 2256	Launder, B.	41	1461
ARC	Glazer, J. H.	HASTINGS COL OF LAW	NCA 2-280801	Wolcott, T.	99	1233
ARC	Mandel, A. D.	UNIV CALIF-IRVINE	NGR 05-041-012	Tilles, J. G.	52	1463
ARC	Hall, C. F.	UNIV CALIF-L ANGELES	NAS 2-9128	Kaula, W. M.	11	1467
ARC	Hall, C. F.	UNIV CALIF-L ANGELES	NAS 2-9131	Schubert, G.	11	1468
ARC	Hall, C. F.	UNIV CALIF-L ANGELES	NAS 2-9491	Russell, C. T.	31	1469
ARC	Ellis, S.	UNIV CALIF-L ANGELES	NCA 2-390801	Parlow, A.	61	1476
ARC	Goldstein, H. E.	UNIV CALIF-L ANGELES	NCA 2-390803	MacKenzie, J. D.	47	1477
ARC	Daunton, N. G.	UNIV CALIF-L ANGELES	NGR 05-007-418	Markham, C. H.	51	1492
ARC	Inouye, M.	UNIV CALIF-L ANGELES	NSG 2270	Cole, J. D.	49	1494
ARC	Ahtye, W. F.	UNIV CALIF-L ANGELES	NSG 2290	Meecham, W. C.	41	1495
ARC	Riccitiello, S. R.	UNIV CALIF-L ANGELES	NSG 2320	MacKenzie, J. D.	47	1496

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ARC	Riccitiello, S. R.	UNIV CALIF-L ANGELES	NSG 2321	MacKenzie, J. D.	19	1497
ARC	Hall, C. F.	UNIV CALIF-SAN DIEGO	NAS 2-6552	Fillius, R. W.	11	1526
ARC	Greenleaf, J. E.	UNIV CALIF-SAN DIEGO	NGL 05-009-109	West, J. B.	53	1545
ARC	Haughney, L. C.	UNIV CALIF-SAN DIEGO	NGR 05-005-055	Soifer, B. T.	11	1549
ARC	Winter, D. L.	UNIV CALIF-SAN DIEGO	NGR 05-009-083	Galambos, R.	61	1551
ARC	Sandler, H.	UNIV CALIF-SAN DIEGO	NGR 05-009-257	Baily, N. A.	52	1557
ARC	Sandler, H.	UNIV CALIF-SAN FRAN	NCA 2-665708	Glantz, S. A.	53	1577
ARC	Feller, D. D.	UNIV CALIF-SAN FRAN	NCA 2-665801	Searle, G. L.	59	1578
ARC	Mehler, W. R.	UNIV CALIF-SAN FRAN	NCA 2-665802	Snyder, R. L.	51	1579
ARC	Callahan, P. X.	UNIV CALIF-SAN FRAN	NCA 2-665803	Asling, C. W.	53	1580
ARC	Grindeland, R.	UNIV CALIF-SAN FRAN	NCA 2-665804	Spencer, M.	53	1581
ARC	Keil, L. C.	UNIV CALIF-SAN FRAN	NCA 2-665806	Dallman, M. F.	59	1582
ARC	Keil, L. C.	UNIV CALIF-SAN FRAN	NCA 2-665807	Ramsay, D. J.	53	1583
ARC	Heinrich, M. R.	UNIV CALIF-SAN FRAN	NCA 2-665808	Goldfine, I.	51	1584
ARC	Daunton, N. G.	UNIV CALIF-SAN FRAN	NCA 2-665809	Ochs, A. L.	51	1585
ARC	Cowings, P. S.	UNIV CALIF-SAN FRAN	NCA 2-665810	Kamiya, J.	61	1586
ARC	Greenleaf, J. E.	UNIV CALIF-S BARBARA	NCA 2-680802	Rochelle, R. H.	59	1590
ARC	Briggs, B. R.	UNIV CALIF-S BARBARA	NCA 2-680803	Estes, J. E.	39	1591
ARC	Cassen, P.	UNIV CALIF-S BARBARA	NCA 2-680805	Peale, S. J.	13	1592
ARC	Nelson, H. G.	UNIV CALIF-S BARBARA	NSG 2222	Shanabarger, M. R.	47	1595
ARC	Hall, C. F.	UNIV OF CHICAGO	NAS 2-6551	Simpson, J. A.	11	2028
ARC	Smith, B. F.	UNIV OF CHICAGO	NCA 2-108801	Miller, R. H.	11	2033
ARC	Cameron, R. M.	UNIV OF CHICAGO	NGR 14-001-211	Harper, D. A., Jr.	11	2046
ARC	Daunton, N. G.	UNIV OF CHICAGO	NGR 14-001-225	Goldberg, J. M.	51	2047
ARC	Gillespie, C. M., Jr.	UNIV OF CHICAGO	NGR 14-001-227	Harper, D. A., Jr.	11	2048
ARC	Gillespie, C. M., Jr.	UNIV OF CHICAGO	NSG 2057	Hildebrand, R. H.	11	2050
ARC	Cameron, R. M.	UNIV OF CHICAGO	NSG 2261	Hildebrand, R. H.	11	2051
ARC	Erzberger, H.	UNIV OF CINCINNATI	NCA 2-130801	Slater, G. L.	41	3135
ARC	Sinnott, D. B.	UNIV COLORADO-BOLDR	NAS 2-8816	Stewart, A. I.	19	1682
ARC	Hall, C. F.	UNIV COLORADO-BOLDR	NAS 2-9477	Stewart, I.	19	1683
ARC	Davis, S. S.	UNIV COLORADO-BOLDR	NSG 2128	Kadlec, R. A.	41	1704
ARC	Whitten, R. C.	UNIV COLORADO-BOLDR	NSG 2248	Castleman, A. W.	12	1705
ARC	Munoz, R. M.	UNIV OF DENVER	NAS 2-8200	Murcray, D. G.	13	1732
ARC	Wilhelmi, A. J.	UNIV OF FLORIDA	NAS 2-9976	Lanzerotti, L. J.	31	1875
ARC	Patton, R. M.	UNIV OF FLORIDA	NGR 10-005-057	Webb, W. B.	69	1888
ARC	Malcolm, G. N.	UNIV OF FLORIDA	NSG 2120	Clarkson, M. H.	41	1894
ARC	Koenig, D. G.	UNIV OF FLORIDA	NSG 2288	Fearn, R. L.	41	1895
ARC	Nishioka, K.	UNIV OF HAWAII-MANOA	NCA 2-285801	Abramson, N.	99	1986
ARC	Tremor, J. W.	UNIV HOUSTON-HOUSTON	NAS 2-9987	Cowles, J. R.	59	3467
ARC	Viegas, J. R.	UNIV HOUSTON-HOUSTON	NSG 2337	Faele Hussain, A. K.	47	3484
ARC	Pollack, J. B.	UNIV ILLINOIS-CHICGO	NCA 2-330701	Krinsley, D.	31	2060
ARC	Slye, R. E.	UNIV ILLINOIS-URBANA	NGR 14-005-202	Ray, R. M.	22	2071
ARC	Williams, B. A.	UNIV ILLINOIS-URBANA	NSG 2099	Heath, J. E.	51	2076
ARC	Palmer, E. A.	UNIV ILLINOIS-URBANA	NSG 2119	Rouse, W. B.	99	2077
ARC	Hall, C. F.	UNIV OF IOWA	NAS 2-6553	VanAllen, J. A.	11	2146
ARC	Marvin, J. G.	UNIV OF IOWA	NSG 2300	Ramaprian, B. R.	41	2159
ARC	Stallcop, J. R.	UNIV OF IOWA	NSG 2327	Stwalley, W. C.	41	2160
ARC	Seiff, A.	UNIV OF KANSAS	NCA 2-365702	Muirhead, V. U.	41	2176
ARC	Johnson, R. D.	UNIV OF KANSAS	NCA 2-365801	Himmelstein, K.	43	2177
ARC	McCutcheon, E.	UNIV OF KENTUCKY	NAS 2-8883	Knapp, C. E.	46	2205
ARC	Sandler, H.	UNIV OF KENTUCKY	NSG 2318	Knapp, C. F.	53	2211
ARC	Holton, E. M.	UNIV OF LOUISVILLE	NSG 2325	Musacchia, X. J.	51	2219
ARC	Sharp, J. C.	UNIV MARYLAND-BALT	NSG 2098	Grenell, R. G.	53	2278
ARC	Hall, C. F.	UNIV OF MASS-AMHERST	NAS 2-9129	McGill, G. E.	11	2549
ARC	Miquel, J.	UNIV OF MIAMI	NCA 2-438801	Rockstein, M.	51	1909
ARC	Hall, C. F.	UNIV MICH-ANN ARBOR	NAS 2-9126	Donahue, T. M.	11	2567
ARC	Hall, C. F.	UNIV MICH-ANN ARBOR	NAS 2-9130	Nagy, A. F.	11	2568
ARC	Feistel, T. W.	UNIV MICH-ANN ARBOR	NSG 2018	Kroeger, R. A.	41	2613

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ARC	Anderson, S. B.	UNIV MICH-ANN ARBOR	NSG 2113	Kroeger, R. A.	41	2614
ARC	Alderette, T.	UNIV MICH-ANN ARBOR	NSG 2245	Howe, R. M.	41	2615
ARC	Fish, R. H.	UNIV MICH-ANN ARBOR	NSG 2333	Springer, G. S.	49	2616
ARC	Thorley, G. W.	U MINN-MNPLS-ST PAUL	NAS 2-8812	Nier, A. O.	31	2639
ARC	Erickson, L. L.	U MINN-MNPLS-ST PAUL	NSG 2316	Moran, J. P.	41	2656
ARC	Johnson, D. A.	UNIV MO-COLUMBIA	NCA 2-450604	Miles, J. B.	45	2703
ARC	Webbon, B. W.	UNIV MO-COLUMBIA	NCA 2-450802	Miles, J. B.	46	2704
ARC	Quattrone, P. D.	UNIV MO-COLUMBIA	NSG 2193	Winnick, J.	59	2706
ARC	Coe, C. F.	UNIV MO-ROLLA	NCA 2-450801	Cronin, D. L.	41	2709
ARC	Nelson, H. G.	UNIV NEBRASKA-LINCLN	NGR 28-004-025	Johnson, D. L.	47	2738
ARC	Davis, S. S.	UNIV NEVADA-L VEGAS	NSG 2140	Fromme, J. A.	41	2745
ARC	Presley, L. L.	UNIV OF NEVADA-RENO	NSG 2291	Rose, W. C.	41	2748
ARC	Sandler, H.	U OKLA-HLTH SCI CTR	NSG 2282	Stone, H. L.	53	3181
ARC	Sandler, H.	U OKLA-HLTH SCI CTR	NSG 2312	Stone, H. L.	59	3182
ARC	Dunn, R. S.	UNIV OREGON-EUGENE	NCA 2-587801	Brenner, M.	69	3200
ARC	Whiting, E. E.	UNIV OREGON-EUGENE	NGR 38-003-036	Crasemann, B.	13	3203
ARC	Mah, R. W.	UNIV OF PITTSBURGH	NAS 2-9871	Gualtierierotti, T.	59	3288
ARC	Billingham, J.	UNIV OF PITTSBURGH	NSG 2116	Gatewood, G. D.	11	3297
ARC	Black, D. C.	UNIV OF PITTSBURGH	NSG 2117	Gatewood, G. D.	11	3298
ARC	Stallcop, J. R.	UNIV OF ROCHESTER	NSG 2198	George, T. F.	13	3023
ARC	Souza, K. A.	UNIV SAN FRANCISCO	NAS 2-9504	Benton, E. V.	13	1602
ARC	Philpott, D. E.	UNIV SAN FRANCISCO	NAS 2-9845	Benton, E. V.	59	1603
ARC	Kourtides, D. A.	UNIV SAN FRANCISCO	NSG 2039	Hilado, C. J.	12	1607
ARC	Miquel, J.	UNIV SAN FRANCISCO	NSG 2063	Benton, E. V.	51	1608
ARC	Lawless, J. G.	UNIV SAN FRANCISCO	NSG 2276	Furst, A.	12	1609
ARC	Kraft, L. M.	UNIV SAN FRANCISCO	NSG 2304	Benton, E. V.	51	1610
ARC	Greenleaf, J. E.	UNIV OF SANTA CLARA	NAS 2-9967	Pefley, R. K.	59	1611
ARC	Glazer, J. H.	UNIV OF SANTA CLARA	NCA 2-685402	Alexander, G.	79	1612
ARC	Reynolds, R. T.	UNIV OF SANTA CLARA	NCA 2-685701	Barker, W. A.	32	1613
ARC	Lawless, J. G.	UNIV OF SANTA CLARA	NCA 2-685801	Sweeney, M. A.	51	1614
ARC	Ballhaus, W. F.	UNIV OF SANTA CLARA	NCA 2-685803	Drobot, V.	22	1615
ARC	Hofman, L.	UNIV OF SANTA CLARA	NCA 2-685804	Danielson, R. L.	22	1616
ARC	Connors, M. M.	UNIV OF SANTA CLARA	NCA 2-685805	Akins, F.	62	1617
ARC	Chang, S.	UNIV OF SANTA CLARA	NCA 2-685806	White, D. H.	12	1618
ARC	Hochstein, L. I.	UNIV OF SANTA CLARA	NCA 2-685808	Tomlinson, G. A.	51	1619
ARC	Whitten, R. C.	UNIV OF SANTA CLARA	NCA 2-685809	McCormick, P. T.	13	1620
ARC	Hofman, L.	UNIV OF SANTA CLARA	NCA 2-685810	Danielson, R. L.	22	1621
ARC	Dyal, P.	UNIV OF SANTA CLARA	NCA 2-685811	Barker, W. A.	13	1622
ARC	Grindeland, R.	UNIV OF SANTA CLARA	NCA 2-685812	Fast, T.	51	1623
ARC	Mandel, A. D.	UNIV OF SANTA CLARA	NCA 2-685813	Caren, L. D.	51	1624
ARC	Steger, J. L.	UNIV OF SANTA CLARA	NSG 2086	Walsh, D.	13	1626
ARC	Oberbeck, V. R.	UNIV OF SANTA CLARA	NSG 2275	Aggarwal, H. R.	32	1627
ARC	Koontz, O. L.	UNIV OF SANTA CLARA	NSG 2286	Greeley, R.	32	1628
ARC	Hall, C. F.	UNIV OF SOUTHERN CAL	NAS 2-6558	Judge, D. L.	11	1631
ARC	Hall, C. F.	UNIV OF SOUTHERN CAL	NAS 2-7969	Intriligator, D. S.	11	1632
ARC	Hall, C. F.	UNIV OF SOUTHERN CAL	NAS 2-9478	Intriligator, D. S.	11	1633
ARC	Hruby, R. J.	UNIV STHN COLORADO	NSG 2048	Jenkins, R.	41	1750
ARC	Rubesin, M. W.	UNIV TEXAS-ARLINGTON	NSG 2077	Payne, F. R.	41	3494
ARC	Patton, R. M.	UNIV TEXAS-AUSTIN	NSG 2065	Helmreich, R. L.	69	3526
ARC	Blanchard, M. B.	UNIV TEXAS-AUSTIN	NSG 2310	Nakamura, Y.	19	3527
ARC	Ballhaus, W. F.	UNIV TEXAS-AUSTIN	NSG 2338	Carey, G. F.	41	3528
ARC	Hall, C. F.	UNIV TEXAS-DALLAS	NAS 2-9485	Hoffman, J. H.	31	3548
ARC	Kourtides, D. A.	UNIV OF UTAH	NAS 2-9950	Hughes, B. M.	43	3582
ARC	Kourtides, D. A.	UNIV OF UTAH	NAS 2-10064	Hughes, M.	47	3583
ARC	Wempe, T. E.	UNIV OF UTAH	NGR 45-003-108	Plummer, R. P.	45	3588
ARC	Holton, E. M.	UNIV OF VIRGINIA	NSG 2225	Pitts, G. C.	51	3701
ARC	Goldstein, H. E.	UNIV OF WASHINGTON	NCA 2-850801	Mueller, J. I.	47	3763
ARC	Borucki, W. J.	UNIV OF WASHINGTON	NCA 2-850802	Tillman, J. E.	31	3764

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ARC	Chapman, G. T.	UNIV OF WASHINGTON	NGL 48-002-047	Childs, M. E.	41	3768
ARC	Lee, G.	UNIV OF WASHINGTON	NGR 48-002-141	Childs, M. E.	41	3770
ARC	Smith, D. W.	UNIV OF WASHINGTON	NSG 2176	Joppa, R. G.	41	3772
ARC	Young, R. E.	UNIV OF WASHINGTON	NSG 2228	Holton, J. R.	31	3773
ARC	Corsiglia, V. R.	UNIV OF WASHINGTON	NSG 2260	Joppa, R. G.	41	3774
ARC	Hall, C. F.	UNIV WISC-MADISON	NAS 2-8813	Suomi, V. E.	31	3797
ARC	Hall, C. F.	UNIV WISC-MADISON	NAS 2-9480	Suomi, V. E.	31	3798
ARC	Holton, E. M.	UNIV WISC-MADISON	NCA 2-865701	Deluca, H.	51	3812
ARC	Young, D. R.	UNIV WISC-MADISON	NGR 50-002-051	Cameron, J. R.	52	3816
ARC	Mandel, A. D.	UNIV WISC-MADISON	NGR 50-002-191	Balish, E.	52	3819
ARC	Mandel, A. D.	UNIV WISC-MADISON	NSG 2104	Dick, E. C.	52	3822
ARC	Lowenstein, M.	UTAH STATE UNIV	NAS 2-9557	Jeppesen, H.	31	3593
ARC	Nelson, H. G.	VIRGINIA POLY INST	NSG 2038	Brinson, H. F.	47	3749
ARC	Marvin, J. G.	VIRGINIA POLY INST	NSG 2301	Pierce, F. J.	41	3750
ARC	Poppa, H. R.	WASHINGTON ST UNIV	NCA 2-840801	Dickinson, J. T.	13	3789
ARC	Mascy, A. C.	WASHINGTON UNIVERSTY	NSG 2170	Haefner, L. E.	41	2723
ARC	Young, D. R.	WAYNE STATE UNIV	NSG 2008	Orne, D.	53	2636
ARC	Briggs, B. R.	WESTERN WASHINGTON U	NCA 2-862801	Peterson, G.	39	3791
ARC	Hicks, R. M.	WICHITA STATE UNIV	NSG 2134	Wentz, W. H., Jr.	41	2202
ARC	Daunton, N. G.	WRIGHT STATE UNIV	NCA 2-875801	Crampton, G. H.	59	3171
ARC	Young, D. R.	WRIGHT STATE UNIV	NSG 2034	Beljan, J. R.	53	3173
ARC	Winget, C. M.	XAVIER UNIV-LA	NGR 19-007-004	Ashman, P. U.	51	2240
ARC	Mandel, A. D.	YALE UNIVERSITY	NSG 2185	Evans, A. S.	52	1761
ARC	Cooper, D. M.	YORK UNIVERSITY	NSG 7223	Nicholls, R. W.	31	3854
DFRC	Banner, R. D.	CAL POLY ST U-S LUIS	NSG 4014	Sandlin, D. R.	41	1215
DFRC	Anderson, K. F.	CAL STATE U-NRTHRDGE	NSG 4011	Abbott, R. J.	22	1229
DFRC	Berry, D. T.	FLORIDA TECH UNIV	NSG 4016	Rapson, R. C.	41	1872
DFRC	Iliff, K. W.	OREGON STATE UNIV	NSG 4013	Ruzicka, J.	41	3198
DFRC	Berry, D. T.	PURDUE UNIVERSITY	NSG 4003	Laver, J. A.	41	2117
DFRC	Edwards, J. W.	STANFORD UNIVERSITY	NSG 4002	DeBra, D. B.	41	1376
DFRC	Ehernberger, L. J.	UNIV CALIF-L ANGELES	NSG 4001	Wurtele, M. G.	31	1501
DFRC	Edwards, J. W.	UNIV CALIF-L ANGELES	NSG 4015	Balakrishnan, A. V.	41	1502
DFRC	Fields, R. A.	UNIV OF KANSAS	NSG 4006	Lenzen, K. H.	41	2192
DFRC	Deets, D. A.	UNIV OF KANSAS	NSG 4007	Grose, D. L.	41	2193
DFRC	Jenkins, J. M.	UNIV OF KANSAS	NSG 4008	Lenzen, K. H.	41	2194
DFRC	Saltzman, E. J.	UNIV OF KANSAS	NSG 4009	Muirhead, V. U.	49	2195
DFRC	Deets, D. A.	UNIV OF KANSAS	NSG 4012	Talley, H. E.	41	2196
DFRC	Edwards, J. W.	UNIV OF KANSAS	NSG 4017	Kotsabasis, A.	41	2197
GSFC	Tarlton, M. J.	ADELPHI UNIVERSITY	NAS 5-23688	Dooher, J. P.	39	2834
GSFC	Schmid, P. E.	ALCORN STATE UNIV	NGR 25-012-001	Paul, M. P.	31	2672
GSFC	Spencer, N. W.	AUGSBURG COLLEGE	NSG 5285	Engebretson, M. J.	31	2637
GSFC	Kniffen, D. A.	BOWIE STATE COLLEGE	NGR 21-027-001	Walker, R. P.	11	2243
GSFC	Lefferts, E. J.	BOWIE STATE COLLEGE	NGR 21-027-004	Srivastava, S.	21	2244
GSFC	Caruso, A. J.	BOWIE STATE COLLEGE	NGR 21-027-010	Bhatia, M. S.	13	2245
GSFC	Gross, F. C.	BOWIE STATE COLLEGE	NSG 5009	Rock, M.	12	2247
GSFC	Davis, M. A.	CALIF INST OF TECH	NAS 5-11066	Stone, E. C.	13	1163
GSFC	Gallagher, W. F.	CALIF INST OF TECH	NAS 5-20721	Stone, E. C.	13	1164
GSFC	Neupert, W. M.	CALIF INST OF TECH	NAS 5-22939	Zirin, H.	11	1165
GSFC	Nelsen, E. D.	CALIF INST OF TECH	NAS 5-22965	Ingersoll, A. P.	31	1166
GSFC	Wende, C. D.	CALIF INST OF TECH	NAS 5-23315	Garmire, G. P.	11	1167
GSFC	Stouffer, C. G.	CALIF INST OF TECH	NAS 5-24339	Garmire, G. P.	13	1168
GSFC	Wende, C. D.	CALIF INST OF TECH	NAS 5-25049	Garmire, G. P.	13	1169
GSFC	Bissell, E. E.	CALIF INST OF TECH	NGR 05-002-284	Garmire, G. P.	11	1188
GSFC	Kupperian, J. E., Jr.	CALIF INST OF TECH	NSG 5197	Garmire, G. P.	11	1196
GSFC	Kupperian, J. E., Jr.	CALIF INST OF TECH	NSG 5208	Neugebauer, G.	11	1197
GSFC	Allenby, R. J.	CALIF INST OF TECH	NSG 5224	Whitcomb, J. H.	32	1198
GSFC	Boggess, A.	CALIF INST OF TECH	NSG 5243	Greenstein, J. L.	11	1199
GSFC	Boggess, A.	CALIF INST OF TECH	NSG 5244	Schmidt, M.	11	1200

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GSFC	Allenby, R. J.	CALIF INST OF TECH	NSG 5267	Melosh, H. J.	32	1201
GSFC	Hansen, J. E.	CALIF INST OF TECH	NSG 5301	Yung, Y. L.	31	1202
GSFC	Greene, E. P.	CAL STATE U-NRTHRDGE	NAS 5-24436	Nathanson, W. I.	22	1227
GSFC	Ollendorf, S.	CASE WESTERN RESERVE	NAS 5-24144	Kamotani, Y.	46	3063
GSFC	Kupperian, J. E., Jr.	CASE WESTERN RESERVE	NSG 5136	Bidelman, W. P.	11	3091
GSFC	Dennis, B. R.	CATHOLIC UNIVERSITY	NSG 5066	Werntz, C.	13	1780
GSFC	McAvoy, N.	CATHOLIC UNIVERSITY	NSG 5111	Lally, J.	13	1781
GSFC	Payne, W. A.	CATHOLIC UNIVERSITY	NSG 5173	Hunt, J. B.	31	1782
GSFC	Mueller, J. L.	CITY COLLEGE OF N Y	NAS 5-22392	Pierson, W. J.	33	2837
GSFC	Canuto, V.	CITY COLLEGE OF N Y	NGL 33-013-040	Erlbach, E.	11	2840
GSFC	Hansen, J. E.	CITY COLLEGE OF N Y	NGR 33-013-086	Spar, J.	31	2841
GSFC	Kahle, D. R.	CITY COLLEGE OF N Y	NSG 5013	Schilling, D. L.	45	2845
GSFC	Nelson, D.	COLORADO STATE UNIV	NAS 5-22959	VonDerHaar, T. H.	39	1651
GSFC	Tucker, C. J.	COLORADO STATE UNIV	NAS 5-25081	Maxwell, E. L.	39	1652
GSFC	Theon, J. S.	COLORADO STATE UNIV	NGR 06-002-098	Reiter, W. R.	31	1659
GSFC	Curran, R. J.	COLORADO STATE UNIV	NGR 06-002-102	VonDerHaar, T. H.	31	1660
GSFC	Carpenter, L. H.	COLORADO STATE UNIV	NGR 06-002-191	Thompson, E. G.	32	1664
GSFC	Adler, R. F.	COLORADO STATE UNIV	NSG 5011	Cotton, W. R.	31	1676
GSFC	Neil, E. A.	COLORADO STATE UNIV	NSG 5073	Marlatt, W. E.	31	1677
GSFC	Rodgers, E. B.	COLORADO STATE UNIV	NSG 5258	VonDerHaar, T. H.	31	1678
GSFC	Arking, A.	COLORADO STATE UNIV	NSG 5259	VonDerHaar, T. H.	31	1679
GSFC	Gemmell, J. D.	COLUMBIA UNIVERSITY	NAS 5-22408	Novick, R.	31	2851
GSFC	Jennings, N.	COLUMBIA UNIVERSITY	NAS 5-24080	Lewis, J. P.	99	2852
GSFC	Gemmell, J. D.	COLUMBIA UNIVERSITY	NAS 5-24152	Novick, R.	31	2853
GSFC	Jennings, N.	COLUMBIA UNIVERSITY	NAS 5-24452	Lewis, J. P.	21	2854
GSFC	Stouffer, C. G.	COLUMBIA UNIVERSITY	NAS 5-24457	Novick, R.	11	2855
GSFC	Bissell, E. E.	COLUMBIA UNIVERSITY	NGR 33-008-102	Novick, R.	11	2862
GSFC	Smith, D. E.	COLUMBIA UNIVERSITY	NGR 33-008-146	Scholz, C. H.	19	2863
GSFC	Thaddeus, P.	COLUMBIA UNIVERSITY	NGR 33-008-191	Hartmann, S. R.	11	2866
GSFC	Allenby, R. J.	COLUMBIA UNIVERSITY	NSG 5072	Bilham, R. G.	32	2872
GSFC	Kupperian, J. E., Jr.	COLUMBIA UNIVERSITY	NSG 5079	Wolff, R. S.	11	2873
GSFC	Ungar, S. G.	COLUMBIA UNIVERSITY	NSG 5080	Webb, K. E.	32	2874
GSFC	Kupperian, J. E., Jr.	COLUMBIA UNIVERSITY	NSG 5118	Wolff, R. S.	11	2875
GSFC	Bissell, E. E.	COLUMBIA UNIVERSITY	NSG 5146	Novick, R.	13	2876
GSFC	Thaddeus, P.	COLUMBIA UNIVERSITY	NSG 5163	Happner, W.	11	2877
GSFC	Kupperian, J. E., Jr.	COLUMBIA UNIVERSITY	NSG 5168	Hayes, D. P.	11	2878
GSFC	Kupperian, J. E., Jr.	COLUMBIA UNIVERSITY	NSG 5194	Novick, R.	11	2879
GSFC	Kupperian, J. E., Jr.	COLUMBIA UNIVERSITY	NSG 5200	Novick, R.	11	2880
GSFC	Schnetzler, C. C.	COLUMBIA UNIVERSITY	NSG 5222	Kuo, J. T.	32	2881
GSFC	Smith, D. E.	COLUMBIA UNIVERSITY	NSG 5273	Talwani, M.	32	2882
GSFC	Berg, O. E.	CONCORDIA COL-MOORHD	NAS 5-23557	Bailey, C. F.	11	2638
GSFC	Ford, F.	COPPIN STATE COLLEGE	NSG 5051	McDermott, P. P.	12	2248
GSFC	Gustafson, C.	CORNELL UNIVERSITY	NAS 5-20705	Walker, J. C.	13	2891
GSFC	Conrath, B. J.	CORNELL UNIVERSITY	NAS 5-23236	Gierasch, P. J.	13	2892
GSFC	Pirraglia, J. A.	CORNELL UNIVERSITY	NAS 5-23785	Gierasch, P. J.	31	2893
GSFC	Smith, D. E.	CORNELL UNIVERSITY	NSG 5060	Turcotte, D. L.	32	2915
GSFC	Jastrow, R.	DARTMOUTH COLLEGE	NSG 5014	Fox, L.	39	2750
GSFC	Hansen, J. E.	DARTMOUTH COLLEGE	NSG 5145	Self, S. L.	31	2751
GSFC	Nelsen, E. D.	DREXEL UNIVERSITY	NAS 5-22946	House, F. B.	13	3216
GSFC	Ucellini, L. W.	DREXEL UNIVERSITY	NSG 5162	Kreitzberg, C.	31	3221
GSFC	Rodriguez, G. E.	DUKE UNIVERSITY	NAS 5-22475	Wilson, T. G.	45	3031
GSFC	Rodriguez, G. E.	DUKE UNIVERSITY	NAS 5-25351	Wilson, T. G.	45	3032
GSFC	Rodriguez, G. E.	DUKE UNIVERSITY	NGL 34-001-001	Wilson, T. G.	45	3033
GSFC	Heath, D. F.	FAIRFIELD UNIVERSITY	NGR 07-010-002	McElaney, J. H.	31	1752
GSFC	Stecker, F. W.	FISK UNIVERSITY	NSG 5297	Mickens, R. E.	13	3333
GSFC	Alterescu, S.	FLORIDA A&M UNIV	NAS 5-25165	Fresh, F. A.	53	1851
GSFC	Greene, E. P.	FLORIDA ATLANTIC U	NAS 5-24437	Hadlock, F. O.	45	1857
GSFC	Hobbs, R. W.	FLORIDA TECH UNIV	NSG 5110	Katzin, J. C.	11	1873

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TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	GRANT/ CONTRACT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
GSFC	Hobbs, R. W.	GEORGE MASON UNIV	NCA 5-92	Kafatos, M.	11	3619
GSFC	Levine, D. M.	GEORGE WASHINGTON U	NAS 5-23809	Lang, R. H.	19	1785
GSFC	Rende, J. V.	GEORGE WASHINGTON U	NAS 5-24431	Helgert, H. J.	45	1786
GSFC	Morakis, J. C.	GEORGE WASHINGTON U	NSG 5109	Helgert, H. J.	49	1813
GSFC	LeVine, D. M.	GEORGE WASHINGTON U	NSG 5288	Lang, R. H.	45	1814
GSFC	King, J. L.	GEORGIA INST OF TECH	NAS 5-23710	Dees, J. W.	45	1936
GSFC	Levine, D. M.	GEORGIA INST OF TECH	NAS 5-24148	Wilson, C. S.	31	1937
GSFC	King, J. L.	GEORGIA INST OF TECH	NAS 5-24480	Schuchardt, J. M.	45	1938
GSFC	King, J. L.	GEORGIA INST OF TECH	NSG 5012	McMillan, R. W.	45	1962
GSFC	King, J. L.	GEORGIA INST OF TECH	NSG 5082	Dees, J. W.	31	1963
GSFC	Atlas, D.	GEORGIA INST OF TECH	NSG 5220	Metcalf, J. I.	31	1964
GSFC	Spencer, C. W.	HARVARD UNIVERSITY	NAS 5-23199	McElroy, M. B.	31	2370
GSFC	Donley, J. L.	HARVARD UNIVERSITY	NAS 5-23494	Reeves, E. M.	31	2371
GSFC	Spencer, N. W.	HARVARD UNIVERSITY	NAS 5-24134	McElroy, M. B.	31	2372
GSFC	McAvoy, N.	HARVARD UNIVERSITY	NGL 22-007-117	Bloembergen, N.	13	2380
GSFC	Kupperian, J. E., Jr.	HARVARD UNIVERSITY	NSG 5143	Flannery, B. P.	11	2391
GSFC	Halem, M.	HARVARD UNIVERSITY	NSG 5160	Lindzen, R. S.	31	2392
GSFC	Reed, E. I.	HARVARD UNIVERSITY	NSG 5176	Parkinson, W. H.	13	2393
GSFC	Kupperian, J. E., Jr.	HARVARD UNIVERSITY	NSG 5191	Dupree, A. K.	11	2394
GSFC	Kupperian, J. E., Jr.	HARVARD UNIVERSITY	NSG 5226	Dupree, A. K.	11	2395
GSFC	Halem, M.	HARVARD UNIVERSITY	NSG 5228	Robinson, A. R.	33	2396
GSFC	Boggess, A.	HARVARD UNIVERSITY	NSG 5229	Dupree, A. K.	11	2397
GSFC	Boggess, A.	HARVARD UNIVERSITY	NSG 5239	Dupree, A. K.	11	2398
GSFC	Kupperian, J. E., Jr.	HARVARD UNIVERSITY	NSG 5293	Dupree, A. K.	11	2399
GSFC	Kupperian, J. E., Jr.	HOUSTON BAPTIST UNIV	NSG 5188	Morgan, T. H.	11	3393
GSFC	Alterescu, S.	HOWARD UNIVERSITY	NAS 5-23799	Chang, P.	52	1819
GSFC	Barrowman, J. S.	HOWARD UNIVERSITY	NAS 5-24242	Fan, D. N.	41	1820
GSFC	Hui, P. S.	HOWARD UNIVERSITY	NAS 5-24251	Choudhury, A. K.	49	1821
GSFC	Hayes, J. M.	HOWARD UNIVERSITY	NAS 5-24422	Bords, G.	46	1822
GSFC	Alterescu, S.	HOWARD UNIVERSITY	NAS 5-25185	Thorpe, A. M.	39	1823
GSFC	Mundy, J. R.	HOWARD UNIVERSITY	NCA 5-21	Cox, E. L.	99	1824
GSFC	Yin, L. I.	HOWARD UNIVERSITY	NGR 09-011-057	Tsang, T.	13	1827
GSFC	Stief, L. J.	HOWARD UNIVERSITY	NSG 5071	Jackson, W. M.	12	1832
GSFC	Alterescu, S.	HOWARD UNIVERSITY	NSG 5081	Deloatch, E. M.	53	1833
GSFC	Picciolo, G. L.	HOWARD UNIVERSITY	NSG 5104	Okrend, H. H.	51	1834
GSFC	Friedman, D. S.	HOWARD UNIVERSITY	NSG 5127	Fischmann, E. J.	52	1835
GSFC	Lyons, J. C.	HOWARD UNIVERSITY	NSG 5158	Deloatch, E. M.	13	1836
GSFC	O'Keefe, J. A.	HOWARD UNIVERSITY	NSG 5186	Thorpe, A. N.	13	1837
GSFC	Yin, L. I.	HOWARD UNIVERSITY	NSG 5268	Ferguson, G. A.	53	1838
GSFC	Laughlin, C. R.	HOWARD UNIVERSITY	NSG 5295	Gill, T. L.	21	1839
GSFC	Hobbs, R. W.	INDIANA U-BLOOMINGTN	NAS 5-22987	Burkhead, M. S.	11	2089
GSFC	Kupperian, J. E., Jr.	IOWA STATE UNIV	NSG 5199	Lamb, R. C.	11	2144
GSFC	Spencer, N. W.	JOHNS HOPKINS UNIV	NAS 5-11415	Doering, J. P.	31	2250
GSFC	Boggess, A.	JOHNS HOPKINS UNIV	NAS 5-23316	Fastie, W. G.	11	2251
GSFC	Friedman, D. S.	JOHNS HOPKINS UNIV	NAS 5-23732	Long, D.	53	2252
GSFC	Wilson, L.	JOHNS HOPKINS UNIV	NAS 5-24236	Fastie, W. G.	11	2253
GSFC	Bissell, E. E.	JOHNS HOPKINS UNIV	NGR 21-001-001	Fastie, W. G.	11	2257
GSFC	Smith, D. E.	JOHNS HOPKINS UNIV	NSG 5090	Marsh, B. D.	32	2262
GSFC	Mueller, J. L.	JOHNS HOPKINS UNIV	NSG 5161	Phillips, O. M.	33	2263
GSFC	Kupperian, J. E., Jr.	JOHNS HOPKINS UNIV	NSG 5184	Moos, H. W.	11	2264
GSFC	Abshire, J. B.	JOHNS HOPKINS UNIV	NSG 5210	Davidson, F.	45	2265
GSFC	Smith, D. E.	JOHNS HOPKINS UNIV	NSG 5225	Marsh, B. D.	33	2266
GSFC	Kupperian, J. E., Jr.	JOHNS HOPKINS UNIV	NSG 5230	Moos, H. W.	11	2267
GSFC	Boggess, A.	JOHNS HOPKINS UNIV	NSG 5255	Moos, H. W.	11	2268
GSFC	Langel, R. A.	JOHNS HOPKINS UNIV	NSG 5269	Marsh, B. D.	32	2269
GSFC	Salomonson, V. V.	KANSAS STATE UNIV	NSG 5101	Kanemasu, E. T.	31	2169
GSFC	Alterescu, S.	LINCOLN UNIV-PA	NAS 5-23800	Frankowsky, J. W.	53	3239
GSFC	Davis, M. A.	MASS INST OF TECH	NAS 5-11062	Bridge, H. S.	13	2418

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TECHNICAL OFFICER	INSTITUTION	GRANT/ CONTRACT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.	
[illegible]	Rice, C. F.	MASS INST OF TECH	NAS 5-11450	Clark, G. W.	11	2419
[illegible]	Theon, J. S.	MASS INST OF TECH	NAS 5-21980	Staelin, D. H.	31	2420
[illegible]	Heath, D. F.	MASS INST OF TECH	NAS 5-22915	Cunnold, D. M.	41	2421
[illegible]	Gloersen, P.	MASS INST OF TECH	NAS 5-22929	Staelin, D. H.	41	2422
[illegible]	Shiue, J. C.	MASS INST OF TECH	NAS 5-23677	Staelin, D. H.	11	2423
[illegible]	Mather, J. C.	MASS INST OF TECH	NAS 5-24096	Weiss, R.	11	2424
[illegible]	Shiue, J. C.	MASS INST OF TECH	NAS 5-24139	Kong, J. A.	45	2425
[illegible]	Kupperian, J. E., Jr.	MASS INST OF TECH	NAS 5-24441	Clark, G. W.	11	2426
[illegible]	Nace, D. A.	MASS INST OF TECH	NAS 5-24493	Weiss, R.	11	2427
[illegible]	Ippolitto, L.	MASS INST OF TECH	NAS 5-25091	Staelin, D. H.	45	2428
[illegible]	Fitzmaurice, M. W.	MASS INST OF TECH	NGL 22-009-013	Kennedy, R. S.	45	2443
[illegible]	Halem, M.	MASS INST OF TECH	NGR 22-009-727	Stone, P. H.	31	2465
[illegible]	Bissell, E. E.	MASS INST OF TECH	NGR 22-009-730	Rappaport, S. A.	11	2466
[illegible]	McAvoy, N.	MASS INST OF TECH	NGR 22-009-741	Javan, A.	13	2468
GSFC	Clark, T. A.	MASS INST OF TECH	NGR 22-009-839	Shapiro, I. I.	99	2475
GSFC	Hansen, J. E.	MASS INST OF TECH	NSG 5076	Rivas, E. K.	11	2517
GSFC	Hansen, J. E.	MASS INST OF TECH	NSG 5113	Stone, P. H.	31	2518
GSFC	Stone, R. G.	MASS INST OF TECH	NSG 5150	Burke, B. F.	11	2519
GSFC	Schaefer, D. H.	MASS INST OF TECH	NSG 5157	McClellan, J. H.	45	2520
GSFC	Halem, M.	MASS INST OF TECH	NSG 5166	Charney, J. G.	31	2521
GSFC	Wexler, R.	MASS INST OF TECH	NSG 5204	Austin, P. M.	31	2522
GSFC	Smith, D. E.	MASS INST OF TECH	NSG 5253	Sclater, J. G.	32	2523
GSFC	Frey, H. V.	MASS INST OF TECH	NSG 5260	Molnar, P.	32	2524
GSFC	Alterescu, S.	MEHARRY MEDICAL COL	NAS 5-23801	Anderson, R. S.	52	3336
GSFC	Kupperian, J. E., Jr.	MIDDLEBURY COLLEGE	NSG 5198	Winkler, P. F.	11	3604
GSFC	Fischel, D.	MONTGOMERY COLLEGE	NAS 5-25120	Fahey, P. P.	11	2273
GSFC	Alterescu, S.	MOREHOUSE COLLEGE	NAS 5-23571	Margolis, S.	52	1966
GSFC	Friedman, D. S.	MORGAN STATE UNIV	NAS 5-23558	Taylor, J.	49	2274
GSFC	Baker, G. R.	MORGAN STATE UNIV	NSG 5074	Hammond, E. C., Jr.	11	2276
GSFC	Hobbs, R. W.	NEW MEX INST MINING	NCA 5-64	Moore, E.	11	2804
GSFC	Hobbs, R. W.	NEW MEX INST MINING	NCA 5-67	Moore, E.	11	2805
GSFC	Hobbs, R. W.	NEW MEX INST MINING	NCA 5-68	Moore, E.	11	2806
GSFC	Hobbs, R. W.	NEW MEX INST MINING	NCA 5-69	Moore, E.	11	2807
GSFC	Hobbs, R. W.	NEW MEX INST MINING	NCA 5-71	Moore, E.	11	2808
GSFC	Hobbs, R. W.	NEW MEX INST MINING	NCA 5-72	Ford, K. W.	11	2809
GSFC	Jones, H. P.	NEW MEX INST MINING	NCA 5-78	Moore, E.	11	2810
GSFC	Pincus, B. R.	NEW MEX ST U-LAS CR	NAS 5-24241	Lawrence, H.	49	2811
GSFC	Schneck, P. B.	NEW YORK UNIVERSITY	NSG 5032	Schwartz, J. T.	13	2936
GSFC	Halem, M.	NEW YORK UNIVERSITY	NSG 5034	Isaacson, E.	31	2937
GSFC	Halem, M.	NEW YORK UNIVERSITY	NSG 5045	Hoffert, M. I.	31	2938
GSFC	Halem, M.	NEW YORK UNIVERSITY	NSG 5130	Isaacson, E.	31	2939
GSFC	Halem, M.	NEW YORK UNIVERSITY	NSG 5133	Hoffert, M. I.	39	2940
GSFC	Henry, V.	NO CAR A&T STATE U	NAS 5-24101	Williams, L. J.	45	3036
GSFC	McAvoy, N.	N CAR CENTRAL UNIV	NSG 5120	Dutta, J. M.	13	3042
GSFC	Kupperian, J. E., Jr.	NORTHWESTERN UNIV	NSG 5196	Ulmer, M. P.	11	2024
GSFC	Hirschmann, E.	OHIO STATE UNIV	NAS 5-22575	Hodge, D. B.	45	3108
GSFC	Marsh, J. G.	OHIO STATE UNIV	NGR 36-008-161	Rapp, R. H.	32	3114
GSFC	Kupperian, J. E., Jr.	OHIO STATE UNIV	NSG 5140	Collins, G. W., II	11	3126
GSFC	Kupperian, J. E., Jr.	OHIO STATE UNIV	NSG 5141	Slettebak, A. E.	11	3127
GSFC	Boggess, A.	OHIO STATE UNIV	NSG 5247	Wing, R. F.	11	3128
GSFC	Smith, D. E.	OHIO STATE UNIV	NSG 5265	Mueller, I. I.	32	3129
GSFC	Kupperian, J. E., Jr.	OHIO STATE UNIV	NSG 5275	Schmidt, E. G.	32	3130
GSFC	Kupperian, J. E., Jr.	OHIO STATE UNIV	NSG 5299	Slettebak, A. E.	11	3131
GSFC	Fowler, W. B.	OLD DOMINION UNIV	NSG 5053	Becher, J.	19	3679
GSFC	Fowler, W. B.	OLD DOMINION UNIV	NSG 5289	Becher, J.	13	3680
GSFC	Mueller, J.	OREGON STATE UNIV	NAS 5-23738	Zaneveld, R. V.	39	3191
GSFC	Alford, W. L.	PENN STATE U-UNIV PK	NAS 5-23859	McMurtry, G. J.	39	3241
GSFC	Oseroff, H.	PENN STATE U-UNIV PK	NAS 5-24264	Carlson, T. N.	31	3242

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GSFC	Golden, T. S.	PENN STATE U-UNIV PK	NAS 5-24329	Feller, I. R.	99	3243
GSFC	Allenby, R. J.	PENN STATE U-UNIV PK	NSG 5185	Alexander, S. S.	32	3272
GSFC	Adler, R. F.	PENN STATE U-UNIV PK	NSG 5205	Anthes, R. A.	31	3273
GSFC	Spencer, N. W.	PENN STATE U-UNIV PK	NSG 5212	Nisbet, J. S.	13	3274
GSFC	Allenby, R. J.	PENN STATE U-UNIV PK	NSG 5276	Alexander, S. S.	32	3275
GSFC	Pirraglia, J. A.	POLY INST OF NY	NAS 5-24086	Gross, S. H.	31	2942
GSFC	Pirraglia, J. A.	POLY INST OF NY	NAS 5-25076	Gross, S. H.	31	2943
GSFC	Spencer, N. W.	POLY INST OF NY	NSG 5284	Gross, S. H.	31	2954
GSFC	Kupperian, J. E., Jr.	PRINCETON UNIVERSITY	NAS 5-1810	Spitzer, L., Jr.	11	2764
GSFC	Sobieski, S.	PRINCETON UNIVERSITY	NAS 5-20833	Lowrance, J.	11	2765
GSFC	Wilson, L.	PRINCETON UNIVERSITY	NAS 5-22360	Jenkins, E. B.	32	2766
GSFC	Kelsall, T.	PRINCETON UNIVERSITY	NAS 5-22989	Schwarzschild, M.	11	2767
GSFC	Kelsall, T.	PRINCETON UNIVERSITY	NAS 5-23387	Lowrance, J.	11	2768
GSFC	Gemmell, J. D.	PRINCETON UNIVERSITY	NAS 5-23576	Spitzer, L., Jr.	11	2769
GSFC	Mather, J. C.	PRINCETON UNIVERSITY	NAS 5-24100	Wilkinson, D. T.	11	2770
GSFC	Nace, D. A.	PRINCETON UNIVERSITY	NAS 5-24486	Wilkinson, D. T.	11	2771
GSFC	Hobbs, R. W.	PRINCETON UNIVERSITY	NAS 5-25084	Groth, E. J.	11	2772
GSFC	Kelsall, T.	PRINCETON UNIVERSITY	NSG 5063	Lowrance, J. L.	49	2789
GSFC	Boggess, A.	PRINCETON UNIVERSITY	NSG 5248	Jenkins, E. B.	11	2790
GSFC	Williams, J. T.	PRINCETON UNIVERSITY	NSG 5277	Lowrance, J. L.	13	2791
GSFC	Langel, R. A.	PURDUE UNIVERSITY	NAS 5-22816	Hinze, A. J.	32	2096
GSFC	Alford, W. L.	PURDUE UNIVERSITY	NAS 5-24462	Phillips, T. L.	22	2097
GSFC	Langel, R. A.	PURDUE UNIVERSITY	NAS 5-25030	Hinze, W. J.	32	2098
GSFC	Meese, K. J.	RICE UNIVERSITY	NAS 5-9317	Anderson, H. R., Jr.	32	3401
GSFC	Taylor, H. A., Jr.	RICE UNIVERSITY	NAS 5-23338	Cloutier, P. A.	13	3402
GSFC	Teegarden, B. J.	RICE UNIVERSITY	NAS 5-25032	Haymes, R. C.	31	3403
GSFC	Spencer, N. W.	RICE UNIVERSITY	NSG 5286	Reiff, P. H.	31	3415
GSFC	Kupperian, J. E., Jr.	RUTGERS U-N BRUNSWK	NSG 5195	Matilsky, T. A.	11	2798
GSFC	Halem, M.	ST U NY COL-PURCHASE	NSG 5077	Tenenbaum, J.	31	3019
GSFC	Gordon, F., Jr.	SO DAKOTA STATE UNIV	NAS 5-24206	Moore, D.	99	3328
GSFC	Schmugge, T. J.	SO DAKOTA STATE UNIV	NAS 5-24358	Myers, V. I.	39	3329
GSFC	Davis, M. A.	STANFORD UNIVERSITY	NAS 5-20871	Helliwell, R. A.	13	1288
GSFC	Kant, S.	STANFORD UNIVERSITY	NAS 5-21960	DeBra, D. B.	42	1289
GSFC	Oseroff, H.	STANFORD UNIVERSITY	NAS 5-23522	MacOvski, A.	19	1290
GSFC	Broderick, J. C.	STANFORD UNIVERSITY	NAS 5-24232	Lyon, R. J.	32	1291
GSFC	Fellerman, K. D.	STANFORD UNIVERSITY	NAS 5-24409	Helliwell, R. A.	13	1292
GSFC	Davis, M. A.	STANFORD UNIVERSITY	NAS 5-24420	Wilcox, J. M.	13	1293
GSFC	Broderick, J. C.	STANFORD UNIVERSITY	NAS 5-24479	Rich, E. I.	32	1294
GSFC	Ostrow, H.	STANFORD UNIVERSITY	NAS 5-25043	MacOvski, A.	19	1295
GSFC	Bissell, E. E.	STANFORD UNIVERSITY	NSG 5131	Walker, A. B., Jr.	13	1377
GSFC	Mangus, J. D.	STANFORD UNIVERSITY	NSG 5132	Walker, A. B., Jr.	19	1378
GSFC	Halem, M.	STANFORD UNIVERSITY	NSG 5254	Spreiter, J. R.	31	1379
GSFC	Frey, H. V.	STATE UNIV NY-ALBANY	NSG 5274	Burke, K.	32	2983
GSFC	Hansen, J. E.	STATE U NY-STONY BRK	NGR 33-015-165	Owen, T.	31	3000
GSFC	Stewart, R. W.	STATE U NY-STONY BRK	NSG 5102	Hogan, J.	31	3005
GSFC	Kerr, A. R.	STATE U NY-STONY BRK	NSG 5125	Kao, Y. H.	11	3006
GSFC	Boggess, A.	STATE U NY-STONY BRK	NSG 5250	Owen, T.	11	3007
GSFC	Adler, R. F.	STATE U NY-STONY BRK	NSG 5271	Atlas, R. M.	31	3008
GSFC	Stonesifer, G. R.	TEXAS A&M UNIVERSITY	NAS 5-20796	Rouse, J. W., Jr.	59	3429
GSFC	Hovis, W. A.	TEXAS A&M UNIVERSITY	NAS 5-22966	El-Sayed, S. Z.	41	3430
GSFC	Stonesifer, G. R.	TEXAS A&M UNIVERSITY	NAS 5-24383	Harlan, J. C.	19	3431
GSFC	Chang, A. T.	TEXAS A&M UNIVERSITY	NAS 5-25144	Blanchard, B. J.	39	3432
GSFC	Chang, A. T.	TEXAS A&M UNIVERSITY	NSG 5134	Blanchard, B. J.	32	3455
GSFC	Chang, A. T.	TEXAS A&M UNIVERSITY	NSG 5156	Blanchard, B. J.	32	3456
GSFC	Schmugge, T. J.	TEXAS A&M UNIVERSITY	NSG 5193	McFarland, M. J.	31	3457
GSFC	Wang, J. R.	TEXAS A&M UNIVERSITY	NSG 5266	Newton, R. W.	39	3458
GSFC	McAvoy, N.	UNION COLLEGE	NGR 33-032-004	Galantowicz, A.	13	3021
GSFC	Heppner, J. P.	UNIV ALASKA-FAIRBNKS	NAS 5-25327	Brown, N. B.	13	1070

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GSFC	Spencer, N. W.	UNIV ALASKA-FAIRBNKS	NSG 5219	Rees, M. H.	13	1072
GSFC	Wilson, L.	UNIV OF ARIZONA	NAS 5-24308	Smith, B. A.	11	1098
GSFC	Donn, B. D.	UNIV OF ARIZONA	NCA 5-93	Martineck, S.	31	1108
GSFC	McAvoy, N.	UNIV OF ARIZONA	NSG 5022	Lamb, W. E., Jr.	13	1128
GSFC	LeVine, D. M.	UNIV OF ARIZONA	NSG 5023	Krider, E. P.	31	1129
GSFC	Boggess, A.	UNIV OF ARIZONA	NSG 5235	Imhoff, C. L.	11	1130
GSFC	Boggess, A.	UNIV OF ARIZONA	NSG 5249	Tomasko, M. G.	11	1131
GSFC	Schmugge, T. J.	UNIV OF ARIZONA	NSG 5279	Evans, D. D.	31	1132
GSFC	McAvoy, N.	UNIV OF ARIZONA	NSG 5302	Lamb, W. E., Jr.	13	1133
GSFC	Davis, M. A.	UNIV CALIF-BERKELEY	NAS 5-20079	Anderson, K. A.	13	1386
GSFC	Davis, M. A.	UNIV CALIF-BERKELEY	NAS 5-20080	Mozer, F. S.	13	1387
GSFC	Gallagher, W. F.	UNIV CALIF-BERKELEY	NAS 5-20995	Heckman, H.	13	1388
GSFC	Gallagher, W. F.	UNIV CALIF-BERKELEY	NAS 5-22307	Anderson, K. A.	32	1389
GSFC	Mather, J. C.	UNIV CALIF-BERKELEY	NAS 5-24105	Alvarez, L. W.	11	1390
GSFC	Campbell, C. E.	UNIV CALIF-BERKELEY	NAS 5-24165	Buffington, A.	13	1391
GSFC	Campbell, C. E.	UNIV CALIF-BERKELEY	NAS 5-24166	Price, P. B.	13	1392
GSFC	Willis, S. E.	UNIV CALIF-BERKELEY	NAS 5-24189	Bowyer, C. S.	11	1393
GSFC	Willis, S. E.	UNIV CALIF-BERKELEY	NAS 5-24445	Bowyer, C. S.	11	1394
GSFC	Nice, D. A.	UNIV CALIF-BERKELEY	NAS 5-25007	Smoot, G.	11	1395
GSFC	Leckrone, D.	UNIV CALIF-BERKELEY	NAS 5-25070	King, I.	11	1396
GSFC	Bissell, E. E.	UNIV CALIF-BERKELEY	NGR 05-003-450	Bowyer, C. S.	11	1420
GSFC	Chang, T. C.	UNIV CALIF-BERKELEY	NSG 5093	Angelakos, D. J.	49	1439
GSFC	Kupperian, J. E., Jr.	UNIV CALIF-BERKELEY	NSG 5164	Bowyer, C. S.	11	1440
GSFC	Kupperian, J. E., Jr.	UNIV CALIF-BERKELEY	NSG 5201	Shull, J. M.	11	1441
GSFC	Kupperian, J. E., Jr.	UNIV CALIF-BERKELEY	NSG 5227	Bowyer, C. S.	11	1442
GSFC	Kim, H. H.	UNIV CALIF-BERKELEY	NSG 5256	Colwell, R. N.	33	1443
GSFC	Kupperian, J. E., Jr.	UNIV CALIF-BERKELEY	NSG 5292	Bowyer, C. S.	11	1444
GSFC	Nelson, D.	UNIV CALIF-DAVIS	NAS 5-22964	Coulson, K. L.	41	1454
GSFC	Rango, A.	UNIV CALIF-DAVIS	NSG 5092	Algazi, V. R.	39	1462
GSFC	Davis, M. A.	UNIV CALIF-L ANGELES	NAS 5-20064	Russell, C. T.	13	1470
GSFC	Wende, C. D.	UNIV CALIF-L ANGELES	NAS 5-23702	Coleman, P. J., Jr.	39	1471
GSFC	Hoffman, R. A.	UNIV CALIF-L ANGELES	NAS 5-25039	Coroniti, F. V.	13	1472
GSFC	Halem, M.	UNIV CALIF-L ANGELES	NGR 05-007-328	Mintz, Y.	31	1486
GSFC	Kupperian, J. E., Jr.	UNIV CALIF-L ANGELES	NSG 5056	Peters, C. J.	11	1503
GSFC	Kupperian, J. E., Jr.	UNIV CALIF-L ANGELES	NSG 5070	Jura, M. A.	11	1504
GSFC	Wende, C. D.	UNIV CALIF-L ANGELES	NSG 5149	Arozullah, M.	11	1505
GSFC	Kupperian, J. E., Jr.	UNIV CALIF-L ANGELES	NSG 5165	Margon, B. H.	11	1506
GSFC	Kupperian, J. E., Jr.	UNIV CALIF-L ANGELES	NSG 5169	Jura, M. A.	11	1507
GSFC	Reed, E. I.	UNIV CALIF-L ANGELES	NSG 5190	Thorne, R. M.	31	1508
GSFC	Smith, D. E.	UNIV CALIF-L ANGELES	NSG 5263	Kaula, W. M.	32	1509
GSFC	Boggess, A.	UNIV CALIF-L ANGELES	NSG 5272	Plavec, M.	11	1510
GSFC	Temkin, A.	UNIV CALIF-RIVERSIDE	NGL 05-008-005	Poe, R. T.	13	1524
GSFC	Stouffer, G. G.	UNIV CALIF-SAN DIEGO	NAS 5-22375	Peterson, L. E.	11	1529
GSFC	Bartlett, R. O.	UNIV CALIF-SAN DIEGO	NAS 5-23481	McIlwain, C. E.	11	1530
GSFC	Wende, C. D.	UNIV CALIF-SAN DIEGO	NAS 5-23705	McIlwain, C. E.	31	1531
GSFC	Wrublik, D.	UNIV CALIF-SAN DIEGO	NAS 5-24463	Harms, R. J.	11	1532
GSFC	Shannon, J. L., Jr.	UNIV CALIF-SAN DIEGO	NAS 5-24466	Beaver, E. A.	11	1533
GSFC	Shannon, J. L., Jr.	UNIV CALIF-SAN DIEGO	NAS 5-25054	Beaver, E. A.	11	1534
GSFC	Lawson, D. E.	UNIV CALIF-SAN DIEGO	NGR 05-009-246	Berger, J.	39	1556
GSFC	Schaefer, D. H.	UNIV CALIF-SAN DIEGO	NGR 05-009-264	Lee, S. H.	49	1558
GSFC	Barnes, W.	UNIV CALIF-S BARBARA	NSG 5106	Estes, J. E.	33	1596
GSFC	Salomonson, V. V.	UNIV CALIF-S BARBARA	NSG 5155	Ozier, J. D.	32	1597
GSFC	Chang, A. T.	UNIV CALIF-S BARBARA	NSG 5170	Estes, J. E.	32	1598
GSFC	Rango, A.	UNIV CALIF-S BARBARA	NSG 5262	Dozier, J.	39	1599
GSFC	Davis, M. A.	UNIV OF CHICAGO	NAS 5-11067	Simpson, J. A.	13	2029
GSFC	Gallagher, W. F.	UNIV OF CHICAGO	NAS 5-20674	Meyer, P.	13	2030
GSFC	Davis, M. A.	UNIV OF CHICAGO	NAS 5-24430	Simpson, J. A.	13	2031
GSFC	Wexler, R.	UNIV OF CHICAGO	NGR 14-001-008	Fujita, T. T.	31	2042

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TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	GRANT/ CONTRACT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
GSFC	Kupperian, J. E., Jr.	UNIV OF CHICAGO	NSG 5202	Simpson, J. A.	11	2052
GSFC	Kupperian, J. E., Jr.	UNIV OF CHICAGO	NSG 5291	Simpson, J. A.	11	2053
GSFC	Lafleur, W.	UNIV OF CHILE	NAS 5-1925	Danyau, C. R.	99	3855
GSFC	Rice, C. F.	UNIV COLORADO-BOLDR	NAS 5-11405	Stewart, A. I.	31	1684
GSFC	Gemmell, J. D.	UNIV COLORADO-BOLDR	NAS 5-22409	Barth, C. A.	31	1685
GSFC	Boggess, A.	UNIV COLORADO-BOLDR	NAS 5-22833	Conti, P. S.	11	1686
GSFC	Boggess, A.	UNIV COLORADO-BOLDR	NAS 5-23274	Linsky, J. L.	11	1687
GSFC	Alexander, J. K.	UNIV COLORADO-BOLDR	NAS 5-23771	Warwick, J. W.	11	1688
GSFC	Gustafson, C.	UNIV COLORADO-BOLDR	NAS 5-23808	Stewart, A. I.	31	1689
GSFC	Bissell, E. E.	UNIV COLORADO-BOLDR	NGR 06-003-069	Barth, C. A.	11	1697
GSFC	Bissell, E. E.	UNIV COLORADO-BOLDR	NGR 06-003-176	Lillie, C. F.	11	1699
GSFC	Kupperian, J. E., Jr.	UNIV COLORADO-BOLDR	NSG 5098	Conti, P. S.	11	1707
GSFC	Bissell, E. E.	UNIV COLORADO-BOLDR	NSG 5103	Barth, C. A.	19	1708
GSFC	Kelsall, T.	UNIV COLORADO-BOLDR	NSG 5124	Lawrence, G. M.	45	1709
GSFC	Kupperian, J. E., Jr.	UNIV COLORADO-BOLDR	NSG 5147	Barlow, M. J.	11	1710
GSFC	Reber, C. A.	UNIV COLORADO-BOLDR	NSG 5153	London, J.	31	1711
GSFC	Bissell, E. E.	UNIV COLORADO-BOLDR	NSG 5178	Rottman, G. T.	13	1712
GSFC	Kupperian, J. E., Jr.	UNIV COLORADO-BOLDR	NSG 5211	Linsky, J. L.	11	1713
GSFC	Kupperian, J. E., Jr.	UNIV COLORADO-BOLDR	NSG 5246	Snow, T. P.	11	1714
GSFC	Boggess, A.	UNIV COLORADO-BOLDR	NSG 5300	Snow, T. P.	11	1715
GSFC	Bissell, E. E.	UNIV COLORADO-BOLDR	NSG 5303	Snow, T. P.	11	1716
GSFC	Halem, M.	UNIV OF CONNECTICUT	NSG 5075	Bock, P.	31	1755
GSFC	Salomonson, V. V.	UNIV OF CONNECTICUT	NSG 5179	Bock, P.	32	1756
GSFC	Westrom, J. L.	UNIV DC-HARVARD GA	NGR 09-053-003	Walker, E. L.	39	1842
GSFC	Ormes, J. F.	UNIV DC-MT VERNON SQ	NGR 09-050-001	Whiteside, H.	13	1843
GSFC	Nava, D. F.	UNIV DC-MT VERNON SQ	NGR 09-050-019	Wyche, G.	39	1844
GSFC	Lefferts, E. J.	UNIV DC-MT VERNON SQ	NSG 5122	Bakshi, J. S.	21	1845
GSFC	Mentall, J. E.	UNIV DC-MT VERNON SQ	NSG 5192	Morgan, H. D.	13	1846
GSFC	Hobbs, R. W.	UNIV DC-VAN NESS	NCA 5-77	Kasten, R.	11	1847
GSFC	Hobbs, R. W.	UNIV DC-VAN NESS	NCA 5-80	Kasten, R.	11	1848
GSFC	Chappelle, E. W.	UNIV DC-VAN NESS	NSG 5290	Watlington, R. A.	19	1849
GSFC	Kupperian, J. E., Jr.	UNIV OF DELAWARE	NSG 5144	Shipman, H. L.	11	1775
GSFC	Goldberg, R.	UNIV OF DENVER	NAS 5-22981	Barcus, J. R.	19	1733
GSFC	Kunde, V. G.	UNIV OF DENVER	NAS 5-25097	Goldman, A.	31	1734
GSFC	Heath, D. F.	UNIV OF FLORIDA	NAS 5-22908	Green, A. E.	49	1876
GSFC	Kupperian, J. E., Jr.	UNIV OF FLORIDA	NSG 5116	Chen, K. W.	11	1898
GSFC	White, W. W.	UNIV OF HAWAII-MANOA	NAS 5-25181	Cushman, S. F.	11	1983
GSFC	Bissell, E. E.	UNIV OF HAWAII-MANOA	NGR 12-001-075	Jefferies, J. T.	11	1990
GSFC	Kupperian, J. E., Jr.	UNIV OF HAWAII-MANOA	NSG 5096	Boesgaard, A. M.	11	1994
GSFC	Theon, J. S.	UNIV OF HAWAII-MANOA	NSG 5159	Ramage, C. S.	31	1995
GSFC	Nava, D. F.	UNIV OF HAWAII-MANOA	NSG 5203	Philpotts, J. A.	32	1996
GSFC	Kupperian, J. E., Jr.	UNIV OF HAWAII-MANOA	NSG 5231	Boesgaard, A. M.	11	1997
GSFC	Schaefer, D. H.	UNIV ILLINOIS-URBANA	NAS 5-24275	Slotnick, D. L.	45	2064
GSFC	Keating, T., Jr.	UNIV ILLINOIS-URBANA	NAS 5-25062	Mittra, R.	45	2065
GSFC	Bufton, J. L.	UNIV ILLINOIS-URBANA	NSG 5049	Gardner, C. S.	19	2080
GSFC	Spencer, N. W.	UNIV ILLINOIS-URBANA	NSG 5213	Sechrist, C. F., Jr.	13	2081
GSFC	Donn, B. D.	UNIV ILLINOIS-URBANA	NSG 5278	Snyder, L. E.	11	2082
GSFC	Kupperian, J. E., Jr.	UNIV ILLINOIS-URBANA	NSG 5294	Crutcher, R. M.	11	2083
GSFC	Davis, M. A.	UNIV OF IOWA	NAS 5-11064	Frank, L. A.	13	2147
GSFC	White, C.	UNIV OF IOWA	NAS 5-11279	Gurnett, D. A.	11	2148
GSFC	Davis, M. A.	UNIV OF IOWA	NAS 5-11431	Gurnett, D. A.	31	2149
GSFC	Davis, M. A.	UNIV OF IOWA	NAS 5-20093	Gurnett, D. A.	13	2150
GSFC	Davis, M. A.	UNIV OF IOWA	NAS 5-20094	Frank, L. A.	13	2151
GSFC	Fellerman, K. D.	UNIV OF IOWA	NAS 5-24293	Frank, L. A.	13	2152
GSFC	Fellerman, K. D.	UNIV OF IOWA	NAS 5-24294	Shawhan, S. D.	13	2153
GSFC	Heppner, J. P.	UNIV OF IOWA	NAS 5-24336	Gurnett, D. A.	13	2154
GSFC	Broderick, J. C.	UNIV OF KANSAS	NAS 5-20943	Haralick, R.	32	2170
GSFC	Eckerman, J.	UNIV OF KANSAS	NAS 5-22325	Moore, R. K.	32	2171

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GSFC	Rango, A.	UNIV OF KANSAS	NAS 5-23777	Ulaby, F. T.	45	2172
GSFC	Burdett, G. L.	UNIV OF LOUISVILLE	NAS 5-23664	Shelton, D.	42	2215
GSFC	Davis, M. A.	UNIV MARYLAND-COL PK	NAS 5-11063	Gloeckler, G.	13	2280
GSFC	Davis, M. A.	UNIV MARYLAND-COL PK	NAS 5-20062	Gloeckler, G.	13	2281
GSFC	Aikin, A. C.	UNIV MARYLAND-COL PK	NAS 5-22537	Wilkerson, T. W.	31	2282
GSFC	Findlay, J. A.	UNIV MARYLAND-COL PK	NAS 5-22835	Messenger, C. J.	31	2283
GSFC	Conrath, B. J.	UNIV MARYLAND-COL PK	NAS 5-23237	Ponnamperuma, C. A.	13	2284
GSFC	Trombka, J. I.	UNIV MARYLAND-COL PK	NAS 5-23457	Sommer, S. E.	39	2285
GSFC	Aikin, A. C.	UNIV MARYLAND-COL PK	NAS 5-24130	McIlrath, T. J.	31	2286
GSFC	Kelsall, T.	UNIV MARYLAND-COL PK	NAS 5-24305	Currie, D. G.	45	2287
GSFC	Barsky, J.	UNIV MARYLAND-COL PK	NAS 5-24407	Agrawala, A. K.	22	2288
GSFC	Caudill, L. O.	UNIV MARYLAND-COL PK	NAS 5-25132	McIlrath, T. J.	49	2289
GSFC	Fischel, D.	UNIV MARYLAND-COL PK	NCA 5-11	Harger, R. O.	11	2291
GSFC	Klinglesmith, D. A.	UNIV MARYLAND-COL PK	NCA 5-13	Rosenfeld, A.	31	2292
GSFC	Fischel, D.	UNIV MARYLAND-COL PK	NCA 5-20	Rosenfeld, A.	11	2293
GSFC	Slade, W.	UNIV MARYLAND-COL PK	NCA 5-22	Rosenfeld, A.	11	2294
GSFC	Hobbs, R. W.	UNIV MARYLAND-COL PK	NCA 5-24	Currie, D. G.	11	2295
GSFC	Klinglesmith, D. A.	UNIV MARYLAND-COL PK	NCA 5-26	Rosenfeld, A.	11	2296
GSFC	Klinglesmith, D. A.	UNIV MARYLAND-COL PK	NCA 5-27	Rosenfeld, A.	11	2297
GSFC	Chapman, J. W.	UNIV MARYLAND-COL PK	NCA 5-28	Wockenfuss, W. A.	49	2298
GSFC	Dennis, B. R.	UNIV MARYLAND-COL PK	NCA 5-79	Rosenfeld, A.	31	2299
GSFC	Bauer, S. J.	UNIV MARYLAND-COL PK	NGL 21-002-033	Smith, E. P.	31	2301
GSFC	Hartle, R. E.	UNIV MARYLAND-COL PK	NGR 21-002-096	Matthews, D. L.	31	2305
GSFC	Ogilvie, K. W.	UNIV MARYLAND-COL PK	NGR 21-002-291	Coplan, M. A.	13	2309
GSFC	Teegarden, B. J.	UNIV MARYLAND-COL PK	NGR 21-002-316	Gloeckler, G.	13	2310
GSFC	Stief, L. J.	UNIV MARYLAND-COL PK	NGR 21-002-368	Khanna, R. H.	32	2313
GSFC	Rango, A.	UNIV MARYLAND-COL PK	NGR 21-002-399	McCuen, R. H.	32	2314
GSFC	Salomonson, V. V.	UNIV MARYLAND-COL PK	NSG 5017	Ragan, R. M.	32	2320
GSFC	Clark, T. A.	UNIV MARYLAND-COL PK	NSG 5035	Richard, J. P.	11	2321
GSFC	Degnan, J. J.	UNIV MARYLAND-COL PK	NSG 5042	Hochuli, U. E.	49	2322
GSFC	Levine, D. M.	UNIV MARYLAND-COL PK	NSG 5048	Harger, R. O.	45	2323
GSFC	O'Keefe, J. A.	UNIV MARYLAND-COL PK	NSG 5083	Pai, S. I.	19	2324
GSFC	Theon, J. S.	UNIV MARYLAND-COL PK	NSG 5084	Thompson, O. E.	31	2325
GSFC	Trombka, J. I.	UNIV MARYLAND-COL PK	NSG 5094	Balakrishnan, A. V.	32	2326
GSFC	Wasilewski, P. J.	UNIV MARYLAND-COL PK	NSG 5112	Weidner, J. R.	19	2327
GSFC	Nava, D. F.	UNIV MARYLAND-COL PK	NSG 5121	Weidner, J. R.	32	2328
GSFC	McGarry, F. E.	UNIV MARYLAND-COL PK	NSG 5123	Basili, V. R.	49	2329
GSFC	Johnson, T. S.	UNIV MARYLAND-COL PK	NSG 5129	Alley, C. O.	13	2330
GSFC	Schmugge, T. J.	UNIV MARYLAND-COL PK	NSG 5137	Witczak, M. W.	32	2331
GSFC	Donn, B. D.	UNIV MARYLAND-COL PK	NSG 5172	Khanna, R. J.	12	2332
GSFC	Barnes, W. L.	UNIV MARYLAND-COL PK	NSG 5174	Wilkerson, T. D.	31	2333
GSFC	Bissell, E. E.	UNIV MARYLAND-COL PK	NSG 5177	Moore, J. H.	13	2334
GSFC	Arking, A.	UNIV MARYLAND-COL PK	NSG 5209	Thompson, O. E.	31	2335
GSFC	Winston, G. C.	UNIV MARYLAND-COL PK	NSG 5234	Currie, D. G.	31	2336
GSFC	Winston, G. C.	UNIV MARYLAND-COL PK	NSG 5287	Currie, D. G.	31	2337
GSFC	Ramaty, R.	UNIV MARYLAND-COL PK	NSG 5298	Wall, N. S.	11	2338
GSFC	Nelsen, E. D.	UNIV OF MIAMI	NAS 5-22963	Gordon, H. R.	31	1902
GSFC	Hedin, A. E.	UNIV MICH-ANN ARBOR	NAS 5-11376	Carignan, G. R.	31	2569
GSFC	Spencer, N. W.	UNIV MICH-ANN ARBOR	NAS 5-11380	Carignan, G. R.	31	2570
GSFC	Theon, J. S.	UNIV MICH-ANN ARBOR	NAS 5-20622	Horvath, J. J.	31	2571
GSFC	Cooley, J. E.	UNIV MICH-ANN ARBOR	NAS 5-20939	Carignan, G. R.	31	2572
GSFC	Krehbiel, J. F.	UNIV MICH-ANN ARBOR	NAS 5-22587	Donahue, T. M.	31	2573
GSFC	Trainor, J. H.	UNIV MICH-ANN ARBOR	NAS 5-22875	MacNee, A. B.	13	2574
GSFC	Gustafson, C.	UNIV MICH-ANN ARBOR	NAS 5-23006	Hays, P. B.	31	2575
GSFC	Spencer, N. W.	UNIV MICH-ANN ARBOR	NAS 5-23230	Carignan, G. R.	31	2576
GSFC	Spencer, N. W.	UNIV MICH-ANN ARBOR	NAS 5-24135	Carignan, G. R.	11	2577
GSFC	Fellerman, K. D.	UNIV MICH-ANN ARBOR	NAS 5-24295	Carignan, G. R.	13	2578
GSFC	Fellerman, K. D.	UNIV MICH-ANN ARBOR	NAS 5-24296	Hays, P. B.	13	2579

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GSFC	Wende, C. D.	UNIV MICH-ANN ARBOR	NAS 5-24331	Walker, J. C.	31	2580
GSFC	Niemann, H. B.	UNIV MICH-ANN ARBOR	NAS 5-24454	Carignan, G. R.	11	2581
GSFC	Spencer, N. W.	UNIV MICH-ANN ARBOR	NAS 5-25002	Carignan, G. R.	31	2582
GSFC	Spencer, N. W.	UNIV MICH-ANN ARBOR	NAS 5-25031	Carignan, G. R.	31	2583
GSFC	Hoffman, R. A.	UNIV MICH-ANN ARBOR	NAS 5-25038	Nagy, A. F.	13	2584
GSFC	Niemann, H. B.	UNIV MICH-ANN ARBOR	NAS 5-25145	Carignan, G. R.	31	2585
GSFC	Niemann, H. B.	UNIV MICH-ANN ARBOR	NAS 5-25153	Carignan, G. R.	31	2586
GSFC	Haykin, D.	UNIV MICH-ANN ARBOR	NAS 5-25158	Carignan, G. R.	13	2587
GSFC	Bissell, E. E.	UNIV MICH-ANN ARBOR	NGR 23-005-360	Sharp, W. E.	13	2602
GSFC	Kupperian, J. E., Jr.	UNIV MICH-ANN ARBOR	NSG 5139	Atreya, S. K.	11	2621
GSFC	Stolarski, R. S.	UNIV MICH-ANN ARBOR	NSG 5171	Rusch, D. W.	31	2622
GSFC	Reed, E. I.	UNIV MICH-ANN ARBOR	NSG 5189	Stedman, D. H.	31	2623
GSFC	Kupperian, J. E., Jr.	UNIV MICH-ANN ARBOR	NSG 5206	Donahue, T. M.	11	2624
GSFC	Kupperian, J. E., Jr.	UNIV MICH-ANN ARBOR	NSG 5232	Atreya, S. K.	11	2625
GSFC	Spencer, N. W.	UNIV MICH-ANN ARBOR	NSG 5281	Fontheim, E. G.	31	2626
GSFC	Spencer, N. W.	UNIV MICH-ANN ARBOR	NSG 5282	Nagy, A. F.	31	2627
GSFC	Gemmell, J. D.	U MINN-MNPLS-ST PAUL	NAS 5-11310	Kellogg, P. J.	11	2640
GSFC	Spencer, N. W.	U MINN-MNPLS-ST PAUL	NAS 5-11438	Nier, A. O.	31	2641
GSFC	Barrowman, J. S.	U MINN-MNPLS-ST PAUL	NAS 5-23684	Waddington, C. J.	11	2642
GSFC	Wende, C. D.	U MINN-MNPLS-ST PAUL	NAS 5-23703	Winckler, J. R.	31	2643
GSFC	Stone, R. G.	U MINN-MNPLS-ST PAUL	NAS 5-25151	Kellogg, P. J.	11	2644
GSFC	Bissell, E. E.	U MINN-MNPLS-ST PAUL	NSG 5088	Winckler, J. R.	13	2659
GSFC	Boggess, A.	U MINN-MNPLS-ST PAUL	NSG 5237	Black, J. H.	11	2660
GSFC	Curran, R. J.	UNIV MO-COLUMBIA	NAS 5-20818	Schuster, B. G.	31	2698
GSFC	Kupperian, J. E., Jr.	UNIV MO-ST LOUIS	NSG 5151	Schwartz, R. D.	11	2716
GSFC	Oseroff, H.	UNIV OF MONTANA	NAS 5-23891	Craighead, J. J.	39	2733
GSFC	Kalet, M. W.	UNIV NEBRASKA-LINCLN	NAS 5-22903	Samson, J. R.	13	2734
GSFC	Kupperian, J. E., Jr.	UNIV NEBRASKA-LINCLN	NSG 5245	Schmidt, E. G.	11	2740
GSFC	Donley, J. L.	UNIV NEW HAMP-DURHAM	NAS 5-23761	Chupp, E. L.	31	2753
GSFC	Wende, C. D.	UNIV NEW HAMP-DURHAM	NAS 5-24328	Arnoldy, R. L.	19	2754
GSFC	Trainor, J. H.	UNIV NEW HAMP-DURHAM	NAS 5-24354	Webber, W. R.	13	2755
GSFC	Temkin, A.	UNIV OF NEW MEXICO	NCA 5-55	Beckel, C. L.	11	2825
GSFC	Maran, S. P.	UNIV OF NEW MEXICO	NCA 5-57	StJohn, R.	11	2826
GSFC	Jones, H. P.	UNIV OF NEW MEXICO	NCA 5-66	Regener, V. H.	11	2827
GSFC	Hobbs, R. W.	UNIV OF NEW MEXICO	NCA 5-73	StJohn, R.	11	2828
GSFC	Kupperian, J. E., Jr.	UNIV OKLAHOMA-NORMAN	NSG 5257	Herczeg, T. J.	11	3188
GSFC	Shiue, J.	UNIV OF PENNSYLVANIA	NAS 5-25136	Kritikos, H. N.	13	3283
GSFC	Boggess, A.	UNIV OF PENNSYLVANIA	NSG 5296	Koch, R. H.	11	3287
GSFC	Christie, C. J.	UNIV OF PERU	NASW 7	Unavailable	49	3864
GSFC	Kostiuk, T.	UNIV OF PITTSBURGH	NAS 5-22892	Falk, J.	43	3289
GSFC	Kostiuk, T.	UNIV OF PITTSBURGH	NAS 5-25013	Falk, J.	13	3290
GSFC	Thomas, H. H.	UNIV OF PITTSBURGH	NSG 5270	Lidiak, E. G.	32	3303
GSFC	Osantowski, J. F.	UNIV OF ROCHESTER	NAS 5-20028	Baumeister, P. W.	13	3022
GSFC	Kupperian, J. E., Jr.	UNIV OF ROCHESTER	NSG 5054	Savedoff, M. P.	11	3024
GSFC	Kutz, R. L.	UNIV OF SOUTHERN CAL	NGL 05-018-118	Andrews, H. C.	45	1637
GSFC	Bissell, E. E.	UNIV OF SOUTHERN CAL	NSG 5108	Judge, D. L.	13	1646
GSFC	Kunde, V. G.	UNIV TENNESSEE-KNOXV	NAS 5-20672	Fox, K.	31	3342
GSFC	Allen, W.	UNIV TENNESSEE-KNOXV	NAS 5-24250	Rochelle, R. W.	45	3343
GSFC	Golden, T. S.	UNIV TENNESSEE-KNOXV	NAS 5-25101	Snyder, W. M.	39	3344
GSFC	Hirschmann, E.	UNIV TEXAS-AUSTIN	NAS 5-22576	Straiton, A. W.	45	3497
GSFC	Kahn, W. D.	UNIV TEXAS-AUSTIN	NAS 5-25018	Tapley, B. D.	19	3498
GSFC	Smith, D. E.	UNIV TEXAS-AUSTIN	NGR 44-012-283	Tapley, B. D.	32	3521
GSFC	Kupperian, J. E., Jr.	UNIV TEXAS-AUSTIN	NSG 5005	Lambert, D. L.	11	3532
GSFC	Fuchs, A. J.	UNIV TEXAS-AUSTIN	NSG 5154	Tapley, B. D.	21	3533
GSFC	Kupperian, J. E., Jr.	UNIV TEXAS-AUSTIN	NSG 5167	Smith, M. A.	11	3534
GSFC	Boggess, A.	UNIV TEXAS-AUSTIN	NSG 5233	VanDenBout, P. A.	11	3535
GSFC	Kupperian, J. E., Jr.	UNIV TEXAS-AUSTIN	NSG 5236	Trafton, L. M.	11	3536
GSFC	Spencer, N. W.	UNIV TEXAS-DALLAS	NAS 5-11406	Hoffman, J. H.	31	3549

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TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	GRANT/ CONTRACT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
GSFC	Spencer, N. W.	UNIV TEXAS-DALLAS	NAS 5-11407	Hanson, W. B.	31	3550
GSFC	Fellerman, K. D.	UNIV TEXAS-DALLAS	NAS 5-24297	Heelis, R. A.	13	3551
GSFC	Fellerman, K. D.	UNIV TEXAS-DALLAS	NAS 5-24298	Hanson, W. B.	13	3552
GSFC	Fellerman, K. D.	UNIV TEXAS-DALLAS	NAS 5-24299	Winningham, J. D.	13	3553
GSFC	Caporale, A. J.	UNIV TEXAS-DALLAS	NAS 5-25310	Hanson, W. B.	11	3554
GSFC	Bissell, E. E.	UNIV TEXAS-DALLAS	NGR 44-004-124	Winningham, J. D.	13	3562
GSFC	Brace, L. H.	UNIV TEXAS-DALLAS	NSG 5085	Heikkik, W. J.	31	3563
GSFC	Brace, L. H.	UNIV TEXAS-DALLAS	NSG 5087	Hoffman, J. H.	31	3564
GSFC	Spencer, N. W.	UNIV TEXAS-DALLAS	NSG 5280	Klumpar, D. M.	31	3565
GSFC	Spencer, N. W.	UNIV TEXAS-S ANTONIO	NSG 5214	Burch, J. L.	13	3579
GSFC	Kupperian, J. E., Jr.	UNIV OF TOLEDO	NSG 5183	Molnar, M. R.	11	3162
GSFC	Kupperian, J. E., Jr.	UNIV OF TOLEDO	NSG 5207	Bopp, B. W.	11	3163
GSFC	Oseroff, H.	UNIV OF VIRGINIA	NAS 5-20999	Dolan, R.	39	3685
GSFC	Wilson, L.	UNIV OF VIRGINIA	NAS 5-22346	O'Connell, R. W.	11	3686
GSFC	Lamb, G. M.	UNIV OF VIRGINIA	NAS 5-24218	Mattauch, R. J.	49	3687
GSFC	Brandt, J.	UNIV OF WASHINGTON	NAS 5-22379	Bohm-Vitense, E.	11	3758
GSFC	Hall, D.	UNIV OF WASHINGTON	NAS 5-25125	Trowbridge, R.	19	3759
GSFC	Eberstein, I.	UNIV OF WASHINGTON	NSG 5039	Leovy, C. B.	31	3777
GSFC	Boggess, A.	UNIV OF WASHINGTON	NSG 5240	Bohm-Vitense, E.	11	3778
GSFC	Spencer, N. W.	UNIV OF WASHINGTON	NSG 5283	Lin, C. S.	31	3779
GSFC	Squires, R. K.	UNIV WISC-MADISON	NAS 5-20974	Suomi, V. E.	13	3799
GSFC	Montgomery, H. E.	UNIV WISC-MADISON	NAS 5-21965	Suomi, V. E.	31	3800
GSFC	Wilson, L.	UNIV WISC-MADISON	NAS 5-22349	Anderson, C. M.	11	3801
GSFC	Gemmell, J. D.	UNIV WISC-MADISON	NAS 5-22410	Kraushaar, W. L.	31	3802
GSFC	Sobieski, S.	UNIV WISC-MADISON	NAS 5-23285	Bless, R. C.	11	3803
GSFC	Greaves, J. R.	UNIV WISC-MADISON	NAS 5-23462	Suomi, V. E.	31	3804
GSFC	Friedman, D. S.	UNIV WISC-MADISON	NAS 5-23500	Houston, N.	53	3805
GSFC	Hasler, A. F.	UNIV WISC-MADISON	NAS 5-23706	Suomi, V. E.	31	3806
GSFC	Theon, J. S.	UNIV WISC-MADISON	NAS 5-24230	Weinman, J. A.	31	3807
GSFC	Friedman, D. S.	UNIV WISC-MADISON	NAS 5-24385	Fetzner, W. N.	53	3808
GSFC	White, R. A.	UNIV WISC-MADISON	NAS 5-24487	Bless, R. C.	11	3809
GSFC	Greaves, J. R.	UNIV WISC-MADISON	NAS 5-25148	Suomi, V. E.	31	3810
GSFC	Bissell, E. E.	UNIV WISC-MADISON	NGL 50-002-013	Code, A. D.	11	3813
GSFC	Bissell, E. E.	UNIV WISC-MADISON	NGL 50-002-044	Kraushaar, W. L.	11	3814
GSFC	Halem, M.	UNIV WISC-MADISON	NGR 50-002-215	Suomi, V. E.	31	3820
GSFC	Kupperian, J. E., Jr.	UNIV WISC-MADISON	NSG 5100	Savage, B. D.	11	3823
GSFC	Theon, J. S.	UNIV WISC-MADISON	NSG 5126	Suomi, V. E.	31	3824
GSFC	Halem, M.	UNIV WISC-MADISON	NSG 5152	Houghton, D. D.	31	3825
GSFC	Kupperian, J. E., Jr.	UNIV WISC-MADISON	NSG 5180	Cassinelli, J. P.	11	3826
GSFC	Kupperian, J. E., Jr.	UNIV WISC-MADISON	NSG 5181	Savage, B. D.	11	3827
GSFC	Halem, M.	UNIV WISC-MADISON	NSG 5223	Herman, G. F.	31	3828
GSFC	Boggess, A.	UNIV WISC-MADISON	NSG 5241	Savage, B. D.	11	3829
GSFC	Boggess, A.	UNIV WISC-MADISON	NSG 5242	Doherty, L. R.	11	3830
GSFC	Minzner, R. A.	UNIV WISC-MADISON	NSG 5251	Suomi, V. E.	31	3831
GSFC	Halem, M.	UNIV WISC-MADISON	NSG 5252	Horn, L. H.	31	3832
GSFC	Stouffer, C. G.	UTAH STATE UNIV	NAS 5-24455	Banks, P. M.	13	3594
GSFC	Spencer, N. W.	UTAH STATE UNIV	NSG 5215	StMaurice, J. P.	13	3597
GSFC	Spencer, N. W.	UTAH STATE UNIV	NSG 5216	Foster, J. C.	13	3598
GSFC	Hirschmann, E.	VIRGINIA POLY INST	NAS 5-22577	Bostian, C. W.	45	3712
GSFC	Kupperian, J. E., Jr.	VIRGINIA POLY INST	NSG 5221	Dennison, B. K.	11	3753
GSFC	Schmidt, R. L.	WALLA WALLA COLLEGE	NAS 5-25063	Heisler, R.	45	3788
GSFC	Kupperian, J. E., Jr.	WASHINGTON UNIVERSTY	NSG 5187	Smith, W. H.	11	2724
GSFC	Boggess, A.	WESTRN KENTUCKY UNIV	NSG 5238	Hackney, R. L.	11	2222
GSFC	Reinhardt, V. S.	WILLIAMS COLLEGE	NSG 5218	Crampton, S. B.	13	2557
GSFC	Schaefer, D. H.	YALE UNIVERSITY	NGL 07-004-005	Barker, R. C.	45	1758
GSFC	Hansen, J. E.	YESHIVA UNIVERSITY	NGL 33-023-018	Finkelstein, D.	11	3027
JPL	England, C.	CAL STATE U-L.ANGLES	NSG 7263	Gold, P. I.	46	1226
JPL	Estabrook, F. B.	SO UNIV-BATON ROUGE	NGR 19-005-006	Yang, C. H.	11	2229

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JSC	Teasdale, W. E.	ALABAMA A&M UNIV	NAS 9-14770	Weathers, G. D.	45	1001
JSC	Harris, J. W.	ARIZONA STATE UNIV	NSG 9068	Buseck, P. R.	32	1092
JSC	Hoffman, R. A.	BAYLOR COL OF MED	NAS 9-13737	Costa, A. J.	53	3380
JSC	Kimzey, S. L.	BAYLOR COL OF MED	NAS 9-14322	Criswell, B. S.	52	3381
JSC	Rippstein, W. J.	BAYLOR COL OF MED	NAS 9-14407	Duncan, W. C.	52	3382
JSC	Homick, J. L.	BAYLOR COL OF MED	NAS 9-14546	Igarashi, M.	51	3383
JSC	Kimzey, S. L.	BAYLOR COL OF MED	NAS 9-14662	Johnson, P. C.	52	3384
JSC	Leach, C. S.	BAYLOR COL OF MED	NAS 9-14715	Suki, W. N.	59	3385
JSC	Kimzey, S. L.	BAYLOR COL OF MED	NAS 9-15457	Criswell, B. S.	52	3386
JSC	Leach, C. S.	BAYLOR COL OF MED	NAS 9-15478	Diferrante, N.	52	3387
JSC	Walner, J. L.	BAYLOR COL OF MED	NAS 9-15552	Chalmers, J. H.	51	3388
JSC	Morrison, D. R.	BAYLOR COL OF MED	NAS 9-15669	Twomey, J. J.	59	3389
JSC	Homick, J. L.	BRANDEIS UNIVERSITY	NAS 9-15147	Lackner, J. R.	59	2366
JSC	Harris, J. W.	BROWN UNIVERSITY	NGR 40-002-123	Rutherford, M. J.	32	3310
JSC	Harris, J. W.	CALIF INST OF TECH	NGL 05-002-188	Wasserburg, G. J.	12	1178
JSC	Harris, J. W.	CALIF INST OF TECH	NGL 05-002-190	Epstein, S.	13	1179
JSC	Harris, J. W.	CALIF INST OF TECH	NGL 05-002-338	Albee, A. L.	13	1181
JSC	Harris, J. W.	CALIF INST OF TECH	NGR 05-002-333	Tombrello, T. A.	13	1190
JSC	Harris, J. W.	CALIF INST OF TECH	NSG 9019	Ahrens, T. J.	19	1214
JSC	Land, C. K.	CITY COLLEGE OF N Y	NAS 9-13940	Schilling, D. L.	45	2839
JSC	Barnes, C. M.	CLARKSON COL OF TECH	NSG 9059	McNulty, P. J.	13	2850
JSC	Reveley, W. F.	CLEMSON UNIV-CLEMSON	NAS 9-13669	Gaddis, J. L.	46	3316
JSC	Hoffman, R. A.	COLORADO STATE UNIV	NSG 9045	Lett, J. T.	59	1680
JSC	Rambaut, P. C.	COLUMBIA UNIVERSITY	NAS 9-14931	Bassett, C. A.	53	2861
JSC	Harris, J. W.	COLUMBIA UNIVERSITY	NGR 33-008-177	Horai, K.	13	2864
JSC	Morrison, D. R.	CORNELL UNIVERSITY	NAS 9-15378	Rubin, A. L.	59	2894
JSC	Nachtwey, D. S.	FLORIDA INST OF TECH	NAS 9-15516	Wells, G. N.	33	1858
JSC	Browne, I. D.	FORT LEWIS COLLEGE	NAS 9-15276	Baker, J. R.	13	1681
JSC	Homick, J. L.	HAHNEMANN MED COL	NAS 9-15620	Digregorio, G. J.	59	3224
JSC	Sawin, C. F.	HARDING COLLEGE	NAS 9-15596	Olree, H.	53	1155
JSC	Nolte, R. W.	HARVARD UNIVERSITY	NAS 9-15326	Newton, R. W.	51	2376
JSC	Harris, J. W.	HARVARD UNIVERSITY	NGL 22-007-247	Hays, J. F.	12	2382
JSC	Leach, C. S.	HARVARD UNIVERSITY	NSG 9054	Moore-Ede, M. C.	53	2407
JSC	Kondo, Y.	HOUSTON BAPTIST UNIV	NGR 44-081-001	Modisette, J. L.	11	3391
JSC	Kondo, Y.	HOUSTON BAPTIST UNIV	NGR 44-081-005	Modisette, J. L.	11	3392
JSC	Potter, A. E.	HOUSTON BAPTIST UNIV	NSG 9038	Morgan, T. H.	11	3394
JSC	Henize, K. G.	HOUSTON BAPTIST UNIV	NSG 9064	Harvel, C. A.	31	3395
JSC	Savely, R. T.	HOWARD UNIVERSITY	NSG 9010	Choudhury, A. K.	45	1841
JSC	McKay, D. S.	INDIANA U-BLOOMINGTN	NSG 9072	Basu, A.	32	2094
JSC	Barnett, T. L.	KANSAS STATE UNIV	NAS 9-14533	Feyerherm, A. M.	39	2166
JSC	Barnett, T. L.	KANSAS STATE UNIV	NAS 9-14899	Kanemasu, E. T.	31	2167
JSC	Morrison, D. R.	LEHIGH UNIVERSITY	NAS 9-15619	Nyiri, L. K.	59	3228
JSC	Harris, J. W.	LEHIGH UNIVERSITY	NGR 39-007-056	Goldstein, J. I.	12	3233
JSC	Potter, A. E.	LEHIGH UNIVERSITY	NGR 39-007-061	McCluskey, G. E., Jr.	11	3234
JSC	Harris, J. W.	LEHIGH UNIVERSITY	NGR 39-007-064	Sclar, C. B.	13	3235
JSC	Giuli, R. T.	LA STATE U-SHREVEPT	NAS 9-9317	Moss, T. A.	11	2225
JSC	Rambaut, P. C.	MARQUETTE UNIVERSITY	NAS 9-15711	Fitts, R. H.	59	3795
JSC	Eichelman, W. F.	MASS INST OF TECH	NAS 9-12334	Toksoz, M. N.	31	2437
JSC	Smith, M. C., Jr.	MASS INST OF TECH	NAS 9-12485	Karel, M.	53	2438
JSC	Luczkowski, S. M.	MASS INST OF TECH	NAS 9-15343	Young, L. R.	59	2439
JSC	Harris, J. W.	MASS INST OF TECH	NGR 22-009-540	Simmons, M. G.	13	2457
JSC	Harris, J. W.	MASS INST OF TECH	NGR 22-009-551	Burns, R. G.	12	2458
JSC	Harris, J. W.	MASS INST OF TECH	NGR 22-009-646	Uhlmann, D. R.	47	2461
JSC	Harris, J. W.	MASS INST OF TECH	NSG 9057	Brecher, A.	32	2544
JSC	Homick, J. L.	MIAMI UNIVERSITY	NAS 9-14538	Parker, D. E.	59	3103
JSC	Krishen, K.	NEW MEX ST U-LAS CR	NAS 9-15524	Carver, K. R.	32	2815
JSC	Davis, W. G.	NEW MEX ST U-LAS CR	NAS 9-15660	Golden, R. L.	31	2816
JSC	Nitschke, H. A.	NEW MEX ST U-LAS CR	NAS 9-95482	Henry, D. G.	39	2817

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JSC	Nachtwey, D. S.	OREGON STATE UNIV	NAS 9-14860	VanDyke, H.	51	3193
JSC	Peterson, J.	OREGON STATE UNIV	NAS 9-15547	Eisgruber, L.	53	3194
JSC	Harris, J. W.	OREGON STATE UNIV	NGL 38-002-039	Schmitt, R. A.	13	3196
JSC	Heydorn, R. P.	PAN AMERICAN UNIV	NSG 9033	Lemaster, E. W.	39	3397
JSC	Pieters, C.	PAN AMERICAN UNIV	NSG 9070	Glaser, F. M.	11	3398
JSC	Raney, J. L.	PENN STATE U-UNIV PK	NAS 9-15427	Stocker, F. J.	22	3249
JSC	Morrison, D. R.	PENN STATE U-UNIV PK	NAS 9-15566	Hymer, W. C.	51	3250
JSC	Morrison, D. R.	PENN STATE U-UNIV PK	NAS 9-15584	Todd, P. W.	52	3251
JSC	Browne, I. D.	PRAIRIE VIEW A&M U	NSG 9006	Brams, E. A.	39	3400
JSC	Harris, J. W.	PRINCETON UNIVERSITY	NGL 31-001-283	Hollister, L. S.	11	2778
JSC	Grandfield, A. L.	PURDUE UNIVERSITY	NAS 9-15081	Bauer, M. E.	39	2101
JSC	Joosten, R. E.	PURDUE UNIVERSITY	NAS 9-15325	Mroczynski, R.	39	2102
JSC	Erickson, J. D.	PURDUE UNIVERSITY	NAS 9-15466	Landgrebe, D. A.	39	2103
JSC	Ansbury, D. L.	PURDUE UNIVERSITY	NAS 9-15508	Hoffer, R. M.	39	2104
JSC	Harris, J. W.	PURDUE UNIVERSITY	NGR 15-005-157	Meyer, H. O.	13	2107
JSC	Kuznetz, L. H.	RENSSELAER POLY-NY	NAS 9-15109	Modest, M. F.	47	2964
JSC	Kelley, J. S.	RENSSELAER POLY-NY	NAS 9-15453	Gutmann, R. J.	45	2965
JSC	Kissinger, L. D.	RICE UNIVERSITY	NAS 9-11827	Davis, S. H.	43	3406
JSC	Arndt, G. D.	RICE UNIVERSITY	NAS 9-15212	Gordon, W. E.	31	3407
JSC	Trevino, L. A.	RICE UNIVERSITY	NAS 9-15274	Wierum, F. A.	46	3408
JSC	Kissinger, L. D.	RICE UNIVERSITY	NAS 9-15630	Davis, S. H.	43	3409
JSC	Harris, J. W.	RICE UNIVERSITY	NGL 44-006-127	Heymann, D.	32	3413
JSC	Harris, J. W.	RUTGERS U-N BRUNSWK	NSG 9065	Klein, L. C.	32	2800
JSC	Horz, F.	ST MARY'S UNIV-SA	NSG 9039	Hanss, R. E.	32	3424
JSC	Hull, W. E.	SO DAKOTA SCHL MINES	NAS 9-15522	Gowen, R. J.	51	3327
JSC	Downs, J.	SO DAKOTA STATE UNIV	NAS 9-15345	Westin, F. C.	32	3330
JSC	Echelkamp, R. E.	SO UNIV-BATON ROUGE	NSG 9030	Grewal, G. S.	45	2235
JSC	McCoy, J. E.	STANFORD UNIVERSITY	NAS 9-15342	Helliwell, R. A.	19	1302
JSC	Robbins, D. E.	STATE UNIV NY-ALBANY	NAS 9-15538	Lala, G. G.	31	2980
JSC	Rummel, J. A.	STATE UNIV NY-ALBANY	NSG 9028	Farhi, L. E.	51	2989
JSC	Harris, J. W.	STATE U NY-STONY BRK	NGL 33-015-130	Bence, A. E.	13	2996
JSC	Harris, J. W.	STATE U NY-STONY BRK	NGL 33-015-174	Schaeffer, O. A.	12	2997
JSC	Harris, J. W.	STATE U NY-STONY BRK	NSG 9013	Hartung, J. B.	32	3015
JSC	Harris, J. W.	STATE U NY-STONY BRK	NSG 9044	Papike, J. J.	13	3016
JSC	Nachtwey, D. S.	TEMPLE UNIVERSITY	NAS 9-14979	Urbach, F.	51	3281
JSC	Nachtwey, D. S.	TEMPLE UNIVERSITY	NAS 9-15207	Urbach, F.	53	3282
JSC	Easley, R. E.	TENNESSEE STATE UNIV	NAS 9-15441	Sampson, C.	99	3337
JSC	Smith, M. C., Jr.	TEXAS A&M UNIVERSITY	NAS 9-12434	Burns, E. E.	59	3437
JSC	Browne, I. D.	TEXAS A&M UNIVERSITY	NAS 9-13894	Freund, R. J.	22	3438
JSC	Buras, N. T.	TEXAS A&M UNIVERSITY	NAS 9-13904	Rouse, J. W., Jr.	39	3439
JSC	Browne, I. D.	TEXAS A&M UNIVERSITY	NAS 9-14689	Guseman, L. F., Jr.	22	3440
JSC	Blanchard, D. P.	TEXAS A&M UNIVERSITY	NAS 9-14828	Randall, J. D.	39	3441
JSC	Demel, K. J.	TEXAS A&M UNIVERSITY	NAS 9-14875	Newton, R. R.	32	3442
JSC	Farris, G. W.	TEXAS A&M UNIVERSITY	NAS 9-15311	Newton, R. W.	45	3443
JSC	Matthews, R. E.	TEXAS A&M UNIVERSITY	NAS 9-15451	Rouse, J. W., Jr.	13	3444
JSC	Amsbury, D. L.	TEXAS A&M UNIVERSITY	NAS 9-15465	Harlan, J. C.	32	3445
JSC	Amsbury, D. L.	TEXAS A&M UNIVERSITY	NAS 9-15468	Whitehorn, N.	99	3446
JSC	Eason, R.	TEXAS A&M UNIVERSITY	NAS 9-15539	Shepard, P.	99	3447
JSC	Day, J. L.	TEXAS TECH UNIV	NAS 9-11162	Portnoy, W. M.	45	3463
JSC	French, B. O.	TUSKEGEE INSTITUTE	NAS 9-13844	Sellers, J. P., Jr.	46	1033
JSC	Kimsey, S. L.	UNIV OF ARIZONA	NAS 9-14692	Bartels, P. H.	59	1105
JSC	Harris, J. W.	UNIV OF ARIZONA	NGR 03-002-388	Drake, M. J.	12	1123
JSC	Demel, K. J.	UNIV ARKANSAS-FAYETV	NAS 9-14251	Waite, W. P.	19	1157
JSC	Garcia, J. G.	UNIV CALIF-BERKELEY	NAS 9-14565	Colwell, R. N.	39	1401
JSC	Harris, J. W.	UNIV CALIF-BERKELEY	NGL 05-003-409	Reynolds, J. H.	13	1415
JSC	Harris, J. W.	UNIV CALIF-BERKELEY	NGL 05-003-410	Price, P. B.	12	1416
JSC	Rambaut, P. C.	UNIV CALIF-DAVIS	NAS 9-15203	Vogel, J. M.	53	1455
JSC	Harris, J. W.	UNIV CALIF-L ANGELES	NGL 05-007-367	Wasson, J. T.	12	1481

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JSC	Harris, J. W.	UNIV CALIF-L ANGELES	NGR 05-007-289	Kaplan, I. R.	13	1484
JSC	Harris, J. W.	UNIV CALIF-SAN DIEGO	NGL 05-009-148	Arnold, J. R.	12	1546
JSC	Harris, J. W.	UNIV CALIF-SAN DIEGO	NGL 05-009-150	Marti, K.	12	1547
JSC	Homick, J. L.	UNIV CALIF-SAN DIEGO	NSG 9048	Bullock, T. H.	53	1575
JSC	Amsbury, D. L.	UNIV CALIF-S BARBARA	NAS 9-15509	Strahler, A. H.	32	1588
JSC	Harris, J. W.	UNIV CALIF-S BARBARA	NGR 05-010-081	Tilton, G. R.	32	1594
JSC	Harris, J. W.	UNIV CALIF-S BARBARA	NSG 9020	Fuller, M. D.	19	1600
JSC	Harris, J. W.	UNIV OF CHICAGO	NGL 14-001-167	Anders, E.	13	2038
JSC	Harris, J. W.	UNIV OF CHICAGO	NGL 14-001-169	Cox, E. L.	12	2039
JSC	Harris, J. W.	UNIV OF CHICAGO	NGL 14-001-171	Smith, J. V.	13	2040
JSC	Harris, J. W.	UNIV COLORADO-BOLDR	NGR 06-003-181	Larson, E. E.	13	1701
JSC	Harris, J. W.	UNIV COLORADO-BOLDR	NSG 9036	Spetzler, H. A.	32	1730
JSC	Booher, C. R.	UNIV OF DENVER	NAS 9-15206	Venditti, F. P.	45	1735
JSC	Luczkowski, S. M.	UNIV OF DENVER	NAS 9-15469	Venditti, F. P.	46	1736
JSC	Nachtwey, D. S.	UNIV OF FLORIDA	NAS 9-15114	Green, A. E.	51	1878
JSC	Nachtwey, D. S.	UNIV OF FLORIDA	NAS 9-15529	Howland, G. P.	51	1879
JSC	Harris, J. W.	UNIV OF HAWAII-MANOA	NSG 9071	Philpotts, J. A.	32	2006
JSC	Sauer, R. L.	UNIV HOUSTON-HOUSTON	NAS 9-11676	Cox, J. E.	59	3468
JSC	Alexander, W. C.	UNIV HOUSTON-HOUSTON	NAS 9-14209	Sheldon, W. R.	11	3469
JSC	Graves, R. C.	UNIV HOUSTON-HOUSTON	NAS 9-14857	Henney, H. R., Jr.	51	3470
JSC	Browne, I. D.	UNIV HOUSTON-HOUSTON	NAS 9-15000	Decell, H. P., Jr.	21	3471
JSC	Eggleston, J. M.	UNIV HOUSTON-HOUSTON	NAS 9-15193	Michalopoulos, C. O.	41	3472
JSC	Jackson, J. T.	UNIV HOUSTON-HOUSTON	NAS 9-15521	Morrow, J. R.	19	3473
JSC	Browne, I. D.	UNIV HOUSTON-HOUSTON	NAS 9-15543	Decell, H. P., Jr.	39	3474
JSC	Morrison, D. A.	UNIV HOUSTON-HOUSTON	NAS 9-15553	King, E. A.	31	3475
JSC	Kennedy, M. G.	UNIV HOUSTON-HOUSTON	NAS 9-15680	Lee, W. B.	49	3476
JSC	Kondo, Y.	UNIV HOUSTON-HOUSTON	NGR 44-005-137	Hildebrandt, A. F.	13	3480
JSC	Sawin, C. F.	UNIV HOUSTON-CL LAKE	NAS 9-15642	Coleman, A. E.	53	3492
JSC	Harris, J. W.	UNIV HOUSTON-CL LAKE	NSG 9043	Blanford, G. E.	13	3493
JSC	Melgares, E.	UNIV ILLINOIS-URBANA	NAS 9-15328	Voss, E. W.	59	2066
JSC	Hull, W. E.	UNIV OF IOWA	NSG 9060	Abboud, F. M.	53	2165
JSC	Demel, K. J.	UNIV OF KANSAS	NAS 9-14052	Ulaby, F. T.	39	2173
JSC	Demel, K. J.	UNIV OF KANSAS	NAS 9-15421	Ulaby, F. T.	31	2174
JSC	Matthews, R. E.	UNIV OF KANSAS	NAS 9-15602	Holtzman, J. C.	39	2175
JSC	Hull, W. E.	UNIV OF KENTUCKY	NAS 9-15452	Bhagat, P. K.	53	2207
JSC	Hoffman, R. A.	UNIV OF LOUISVILLE	NAS 9-14632	Keefe, J. R.	51	2217
JSC	Hoffman, R. A.	UNIV OF LOUISVILLE	NAS 9-15213	Keefe, J. R.	59	2218
JSC	Harris, J. W.	UNIV OF MASS-AMHERST	NGL 22-010-089	Haggerty, S. E.	13	2552
JSC	Harris, J. W.	UNIV OF MASS-AMHERST	NSG 9069	Rhodes, J. M.	32	2556
JSC	Leach, C. S.	UNIV OF MIAMI	NAS 9-15473	Epstein, M.	51	1904
JSC	Homick, J. L.	UNIV MICH-ANN ARBOR	NAS 9-15244	Anderson, D. J.	53	2593
JSC	Reschke, M. F.	UNIV MICH-ANN ARBOR	NAS 9-15375	Anderson, D. J.	59	2594
JSC	Reschke, M. F.	UNIV MICH-ANN ARBOR	NAS 9-15663	Anderson, D. J.	53	2595
JSC	Smith, M. C., Jr.	U MINN-MNPLS-ST PAUL	NAS 9-12560	Mitchell, J. R.	59	2646
JSC	Harris, J. W.	U MINN-MNPLS-ST PAUL	NGL 24-005-225	Pepin, R. O.	13	2648
JSC	Harris, J. W.	U MINN-MNPLS-ST PAUL	NGR 24-005-223	Murthy, V. R.	13	2651
JSC	Harris, J. W.	U MINN-MNPLS-ST PAUL	NGR 24-005-248	Banerjee, S. K.	32	2652
JSC	Harris, J. W.	U MINN-MNPLS-ST PAUL	NSG 9050	Weiblen, P. W.	32	2670
JSC	Eggleston, T. W.	UNIV MO-COLUMBIA	NAS 9-15477	Tranter, W. H.	45	2702
JSC	Dawson, C. T.	UNIV MO-ROLLA	NAS 9-14848	Tranter, W. H.	45	2708
JSC	Harris, J. W.	UNIV OF NEW MEXICO	NGL 32-004-063	Keil, K.	12	2830
JSC	Leach, C. S.	UNIV N CAR-CHPL HILL	NAS 9-14697	Gitelman, H. J.	59	3059
JSC	Harris, J. W.	UNIV OREGON-EUGENE	NGL 38-003-022	Weill, D. F.	13	3201
JSC	Lintott, J. E.	UNIV OF PENNSYLVANIA	NAS 9-15531	Brown, A. H.	51	3285
JSC	Harris, J. W.	UNIV OF PITTSBURGH	NSG 9056	Hapke, B. W.	13	3306
JSC	Barnes, C. M.	UNIV SAN FRANCISCO	NAS 9-15152	Benton, E. V.	53	1605
JSC	Thirolf, R. G.	UNIV SAN FRANCISCO	NAS 9-15337	Benton, E. V.	13	1606
JSC	Lofgren, G.	UNIV STHN COLORADO	NSG 9051	Smith, R. K.	19	1751

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JSC	Kimzey, S. L.	UNIV TENNESSEE-KNOXV	NAS 9-15164	Chen, J. P.	52	3357
JSC	Harris, J. W.	UNIV TENNESSEE-KNOXV	NGL 43-001-140	Taylor, L. A.	11	3359
JSC	Goodrich, W. D.	UNIV TEXAS-AUSTIN	NAS 9-13680	Wagner, J. B.	41	3503
JSC	Richard, R. R.	UNIV TEXAS-AUSTIN	NAS 9-14491	Hartwig, W. H.	49	3504
JSC	Eichelman, W. F.	UNIV TEXAS-AUSTIN	NAS 9-14581	Latham, G. V.	13	3505
JSC	Eichelman, W. F.	UNIV TEXAS-AUSTIN	NAS 9-14810	Latham, G. V.	13	3506
JSC	Potter, A. E.	UNIV TEXAS-AUSTIN	NAS 9-15093	Barnes, T.	11	3507
JSC	Pels, G. F.	UNIV TEXAS-AUSTIN	NAS 9-15217	Tucker, A. J.	49	3508
JSC	Nitschke, H. A.	UNIV TEXAS-AUSTIN	NAS 9-15401	Crow, G. L.	41	3509
JSC	Arndt, G. D.	UNIV TEXAS-AUSTIN	NAS 9-15482	Friedrich, O. M.	45	3510
JSC	Bond, V.	UNIV TEXAS-AUSTIN	NAS 9-15567	Szebekely, V. G.	12	3511
JSC	Harris, J. W.	UNIV TEXAS-AUSTIN	NSG 9021	Gose, W. A.	32	3547
JSC	Duke, M.	UNIV TEXAS-EL PASO	NSG 9062	Hoffer, J. M.	12	3571
JSC	Reschke, M. F.	UNIV TEXAS-GALVESTON	NAS 9-14641	Correia, M. J.	69	3572
JSC	Leach, C. S.	UNIV TEXAS-GALVESTON	NAS 9-15565	Ziegler, M. G.	59	3573
JSC	Harris, J. W.	U TEX HEALTH CTR-SA	NSG 9049	Morgan, J. W.	13	3576
JSC	Rambaut, P. C.	U TEX PUB HLTH-HUS	NAS 9-15388	Booth, F.	51	3577
JSC	Hull, W. E.	U TEX HEALTH CTR-DAL	NSG 9026	Blomquist, C. G.	52	3575
JSC	Rambaut, P. C.	UNIV OF WASHINGTON	NAS 9-13029	Nelp, W. B.	59	3761
JSC	Horz, F.	UNIV OF WASHINGTON	NAS 9-13743	Brownlee, D. E.	32	3762
JSC	Harris, J. W.	UNIV OF WASHINGTON	NSG 9032	Adams, J. D.	32	3786
JSC	Harris, J. W.	UNIV OF WASHINGTON	NSG 9052	Brownlee, D. E.	31	3787
JSC	Barnes, C. M.	UNIV OF WEST FLORIDA	NAS 9-15417	Schaefer, H. J.	59	1922
JSC	Rambaut, P. C.	UNIV WISC-MADISON	NAS 9-15580	Schnoes, H. K.	53	3811
JSC	Nachtwey, D. S.	UTAH STATE UNIV	NAS 9-14871	Caldwell, M. M.	51	3596
JSC	Hoffman, R. A.	VANDERBILT UNIVERSTY	NAS 9-15092	Pratt, L. H.	51	3375
JSC	Hull, W. E.	VIRGINIA COMNWLTH U	NSG 9063	Eckberg, D. L.	52	3706
JSC	Edge, J. T.	VIRGINIA POLY INST	NAS 9-15091	Demerdash, N. A.	45	3714
JSC	Day, J. L.	VIRGINIA POLY INST	NAS 9-15287	Rivers, D. B.	52	3715
JSC	Harris, J. W.	WASHINGTON UNIVERSTY	NGL 26-008-065	Walker, R. M.	13	2720
JSC	Harris, J. W.	WASHINGTON UNIVERSTY	NSG 9055	Haskin, L. A.	32	2729
JSC	Williams R. J.	WASHINGTON UNIVERSTY	NSG 9073	Haskin, L. A.	19	2730
KSC	Withrow, R. A.	BETHUNE-COOKMAN COL	NGR 10-022-001	Poonai, P.	39	1850
KSC	Franks, H. H.	FLORIDA INST OF TECH	NAS10-8399	Bowman, T. E.	43	1859
KSC	Howard, F.	FLORIDA INST OF TECH	NAS10-9166	Bowman, T. A.	12	1860
KSC	Howard, F. S.	FLORIDA INST OF TECH	NAS10-9461	Thomas, J. J.	43	1861
KSC	Buchanan, P.	FLORIDA TECH UNIV	NAS10-8986	Vickers, D. H.	39	1870
KSC	Springer, D. A.	FLORIDA TECH UNIV	NAS10-9455	Riad, S. M.	49	1871
KSC	Keene, L. F.	GEORGIA INST OF TECH	NAS10-9097	Michelson, R. E.	49	1947
KSC	Jafferis, W.	GEORGIA INST OF TECH	NAS10-9210	Woody, J. A.	31	1948
KSC	Morrison, J. D.	KENTUCKY STATE UNIV	NSG 801	Kloek, G.	59	2204
KSC	Schlimmer, G. E.	NEW MEX ST U-LAS CR	NAS10-9115	Noda, T.	42	2818
KSC	Perkins, E. E.	SAVANNAH STATE COL	NSG 803	Ghuman, G. S.	39	1977
KSC	Bostwick, L. G.	SOUTHEASTN OKLA ST U	NSG 802	Robinson, J. L.	51	3180
KSC	Jafferis, W.	UNIV OF ARIZONA	NAS10-8518	Krider, E. P.	31	1107
KSC	Pope, C. D.	UNIV OF FLORIDA	NAS10-8920	Sutherland, R.	39	1880
KSC	Pope, C. D.	UNIV OF FLORIDA	NAS10-9168	Bartholic, J. F.	39	1881
KSC	Davis, T. C., Jr.	UNIV OF FLORIDA	NAS10-9348	Bartholic, J. F.	39	1882
KSC	Jafferis, W.	UNIV OF FLORIDA	NAS10-9378	Childers, D. G.	45	1883
KSC	Horne, F. W., Jr.	UNIV OF FLORIDA	NAS10-9471	Blasquez, C. H.	39	1884
KSC	Jafferis, W.	UNIV OF FLORIDA	NGR 10-005-169	Uman, M. A.	31	1889
KSC	Bland, R. A.	UNIV OF MIAMI	NAS10-8926	Lee, S. S.	39	1905
KSC	Bland, R. A.	UNIV OF MIAMI	NAS10-8954	Hirschberg, J. G.	39	1906
KSC	Bland, R. A.	UNIV OF MIAMI	NAS10-9005	Lee, S. S.	39	1907
KSC	Bland, R. A.	UNIV OF MIAMI	NAS10-9410	Lee, S. S.	46	1908
KSC	Bryan, C. J.	UNIV STHN COLORADO	NSG 806	Mahan, K. I.	12	1749
LARC	Spence, D. C.	ARIZONA STATE UNIV	NAS 1-15168	Greeley, R.	31	1077
LARC	Yates, E. C., Jr.	BOSTON UNIVERSITY	NGR 22-004-030	Morino, L.	41	2364

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LARC	Meador, W. E.	BROOKLYN COLLEGE	NSG 1378	Franco, V.	13	2836
LARC	Williams, T. S., Jr.	BROWN UNIVERSITY	NAS 1-9680	Mutch, T. A.	99	3307
LARC	Williams, T. S., Jr.	CALIF INST OF TECH	NAS 1-9703	Anderson, D. L.	39	1160
LARC	Williams, T. S., Jr.	CALIF INST OF TECH	NAS 1-12311	Horowitz, N. H.	51	1161
LARC	Davis, R. C.	CALIF INST OF TECH	NSG 1005	Babcock, C. D., Jr.	41	1192
LARC	Starnes, J. H.	CALIF INST OF TECH	NSG 1483	Knauss, W. G.	41	1193
LARC	Ward, J. C., Jr.	CAL STATE U-FULLERTN	NAS 1-14621	Ryan, J. A.	31	1217
LARC	Walker, G. H.	CARNEGIE-MELLON UNIV	NGR 39-087-021	Milnes, A. G.	13	3211
LARC	Morris, G. J.	CHRISTPHR NEWPRT COL	NAS 1-14034	Roby, A. B.	41	3606
LARC	Lansing, D. L.	CHRISTPHR NEWPRT COL	NSG 1429	Buoncristiani, A. M.	21	3607
LARC	Byvik, C. E.	CHRISTPHR NEWPRT COL	NSG 1514	Buoncristiani, A. M.	13	3608
LARC	Montgomery, R. C.	CITY COLLEGE OF N Y	NSG 1169	Mekel, R.	41	2842
LARC	Hess, R. V.	CITY COLLEGE OF N Y	NSG 1485	Tchen, C. M.	31	2843
LARC	Poe, C. C., Jr.	CLEMSON UNIV-CLEMSON	NSG 1297	Goree, J. G.	46	3317
LARC	Doggett, R. V., Jr.	CLEMSON UNIV-CLEMSON	NSG 1411	Rudisill, C. S.	41	3318
LARC	Dunning, R. S.	CLEVELAND STATE UNIV	NSG 1445	Chukwu, E. N.	41	3096
LARC	Anderson, A. F.	COLLEGE OF WM & MARY	NAS 1-14972	Aceto, H., Jr.	99	3609
LARC	Anderson, A. F.	COLLEGE OF WM & MARY	NGL 47-006-058	Rublein, G. T.	99	3610
LARC	Young, P. R.	COLLEGE OF WM & MARY	NSG 1095	Kranbuehl, D. E.	12	3611
LARC	Russell, J. M., III	COLLEGE OF WM & MARY	NSG 1203	Park, J. H.	31	3612
LARC	Crouch, R. K.	COLLEGE OF WM & MARY	NSG 1385	Sher, A.	13	3613
LARC	Staaeter, T. A.	COLLEGE OF WM & MARY	NSG 1435	Donegan, M. K.	21	3614
LARC	Russell, J. M., III	COLLEGE OF WM & MARY	NSG 1484	Park, J. H.	31	3615
LARC	Cooper, J. E.	COLORADO STATE UNIV	NAS 1-14538	VonDerHaar, T. H.	31	1649
LARC	Russell, J. M., III	COLORADO STATE UNIV	NAS 1-15129	Crutzen, P. J.	31	1650
LARC	Powell, C. A.	COLUMBIA UNIVERSITY	NSG 1164	Borsky, P. N.	49	2867
LARC	Mixson, J. S.	COLUMBIA UNIVERSITY	NSG 1450	Vaicaitis, R.	41	2868
LARC	Harris, R. L., Sr.	COLUMBIA UNIVERSITY	NSG 1541	Galanter, E.	41	2869
LARC	Cawthorn, J. M.	COLUMBIA UNIVERSITY	NSG 1550	Galanter, E.	49	2870
LARC	Williams, T. S., Jr.	CORNELL UNIVERSITY	NAS 1-9683	Sagan, C. E.	99	2890
LARC	Costen, R. C.	CORNELL UNIVERSITY	NSG 1365	Paine, D. A.	31	2909
LARC	Russell, J. M., III	DREXEL UNIVERSITY	NAS 1-14393	House, F. B.	31	3215
LARC	Price, D. B.	DREXEL UNIVERSITY	NSG 1496	Calise, A. J.	41	3217
LARC	Smith, G. L.	DREXEL UNIVERSITY	NSG 1545	House, F. B.	31	3218
LARC	Williams, T. S., Jr.	FLORIDA STATE UNIV	NAS 1-9693	Hess, S. K.	32	1862
LARC	McMaster, L. R.	FLORIDA STATE UNIV	NAS 1-14930	Craig, R. A.	31	1863
LARC	Hardin, J. C.	FLORIDA STATE UNIV	NSG 1329	Tam, C. K.	13	1866
LARC	Cox, J.	GEORGE MASON UNIV	NCA 1-6	Trehan, A. K.	49	3618
LARC	Duberg, J. E.	GEORGE WASHINGTON U	NAS 1-14605	Liebowitz, H.	41	1784
LARC	Duberg, J. E.	GEORGE WASHINGTON U	NGL 09-010-053	Liebowitz, H.	49	1790
LARC	Margolis, K.	GEORGE WASHINGTON U	NGR 09-010-064	Liebowitz, H.	41	1791
LARC	Bobbitt, P. J.	GEORGE WASHINGTON U	NGR 09-010-074	Liebowitz, H.	41	1792
LARC	Anderson, R. A.	GEORGE WASHINGTON U	NGR 09-010-078	Liebowitz, H.	41	1793
LARC	Margolis, K.	GEORGE WASHINGTON U	NGR 09-010-085	Liebowitz, H.	41	1794
LARC	Croswell, W. F.	GEORGE WASHINGTON U	NGR 09-010-096	Liebowitz, H.	45	1795
LARC	Callis, L. B., Jr.	GEORGE WASHINGTON U	NSG 1026	Liebowitz, H.	31	1796
LARC	Bailey, M. C.	GEORGE WASHINGTON U	NSG 1110	Liebowitz, H.	45	1797
LARC	Swann, R. T.	GEORGE WASHINGTON U	NSG 1155	Liebowitz, H.	47	1798
LARC	Suit, W. T.	GEORGE WASHINGTON U	NSG 1161	Liebowitz, H.	41	1799
LARC	Callis, L. B., Jr.	GEORGE WASHINGTON U	NSG 1216	Liebowitz, H.	31	1800
LARC	Costen, R. C.	GEORGE WASHINGTON U	NSG 1251	Liebowitz, H.	31	1801
LARC	Roderick, G. L.	GEORGE WASHINGTON U	NSG 1289	Liebowitz, H.	47	1802
LARC	Migneault, G. E.	GEORGE WASHINGTON U	NSG 1338	Gross, D.	41	1803
LARC	Roderick, G. L.	GEORGE WASHINGTON U	NSG 1415	Yang, J. N.	47	1804
LARC	Reed, W. H., III	GEORGE WASHINGTON U	NSG 1438	Liebowitz, H.	41	1805
LARC	Crews, J. H., Jr.	GEORGE WASHINGTON U	NSG 1449	Liebowitz, H.	47	1806
LARC	Straeter, T. A.	GEORGE WASHINGTON U	NSG 1472	Maurer, W. D.	49	1807
LARC	Greene, G. C.	GEORGE WASHINGTON U	NSG 1474	Liebowitz, H.	13	1808

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LARC	Craidon, J. B.	GEORGE WASHINGTON U	NSG 1508	Foley, J. D.	21	1809
LARC	Smith, G. L.	GEORGE WASHINGTON U	NSG 1555	Liebowitz, H.	31	1810
LARC	Credeur, K. R.	GEORGE WASHINGTON U	NSG 1556	Gross, D.	21	1811
LARC	Tenney, D. R.	GEORGETOWN UNIV	NSG 1418	Liebowitz, H.	47	1818
LARC	Lawrence, G. F.	GEORGIA INST OF TECH	NAS 1-14351	Zimmer, R. P.	31	1930
LARC	O'Neal, R. L.	GEORGIA INST OF TECH	NAS 1-14654	Blue, M. D.	45	1931
LARC	Hall, J. B., Jr.	GEORGIA INST OF TECH	NAS 1-14947	Wilkins, R. D.	99	1932
LARC	Young, W. H., Jr.	GEORGIA INST OF TECH	NAS 1-15158	Gray, R. B.	41	1933
LARC	O'Neal, R. L.	GEORGIA INST OF TECH	NAS 1-15370	Gaylord, T. K.	45	1934
LARC	Hohl, F.	GEORGIA INST OF TECH	NSG 1288	Clement, J. D.	19	1951
LARC	Newman, J. C., Jr.	GEORGIA INST OF TECH	NSG 1351	Atluri, S. N.	49	1952
LARC	Poe, C. C., Jr.	GEORGIA INST OF TECH	NSG 1352	Hanagud, S. V.	47	1953
LARC	McMaster, L. R.	GEORGIA INST OF TECH	NSG 1493	Grams, G. W.	31	1954
LARC	Jewell, J. W., Jr.	HAMPTON INSTITUTE	NAS 1-14507	Williams, G. K.	41	3620
LARC	Erickson, W. D.	HAMPTON INSTITUTE	NAS 1-14832	Darden, G. C.	19	3621
LARC	Knox, C. E.	HAMPTON INSTITUTE	NAS 1-15445	Hargrove, A.	41	3622
LARC	Katzberg, S. J.	HAMPTON INSTITUTE	NSG 1294	Trehan, A. K.	45	3624
LARC	Bushnell, D. M.	HAMPTON INSTITUTE	NSG 1456	Anyiwo, J. C.	41	3625
LARC	Straeter, T. A.	HAMPTON INSTITUTE	NSG 1478	Hargrove, A.	21	3626
LARC	Beckwith, I. E.	HAMPTON INSTITUTE	NSG 1505	Anyiwo, J. C.	41	3627
LARC	Katzberg, S. J.	HAMPTON INSTITUTE	NSG 1552	Trehan, A. K.	45	3628
LARC	Williams, T. S., Jr.	HARVARD UNIVERSITY	NAS 1-10492	McElroy, M. B.	31	2367
LARC	Johnson, J. W.	HOFSTRA UNIVERSITY	NGR 33-209-002	Weissman, W. E.	45	2925
LARC	Horner, G. C.	HOWARD UNIVERSITY	NSG 1320	Jones, I. W.	42	1830
LARC	Pinson, L. D.	HOWARD UNIVERSITY	NSG 1414	Bainum, P. M.	49	1831
LARC	Adelman, H. M.	ILL INST OF TECH	NSG 1266	Haftka, R. T.	41	2009
LARC	Harvey, W. D.	ILL INST OF TECH	NSG 1451	Nagib, H. M.	41	2010
LARC	Fralich, R. W.	IOWA STATE UNIV	NSG 1372	McDaniel, T. J.	49	2136
LARC	Sobieski, J.	IOWA STATE UNIV	NSG 1530	Pierson, B. L.	41	2137
LARC	Salas, M. D.	IOWA STATE UNIV	NSG 1535	Anderson, D. A.	41	2138
LARC	Shoosmith, J. N.	IOWA STATE UNIV	NSG 1538	Feinberg, R. B.	21	2139
LARC	Abel, I.	ISRAEL INST OF TECH	NSG 7072	Nissim, E.	41	3857
LARC	Bush, H. G.	ISRAEL INST OF TECH	NSG 7083	Weller, T.	41	3858
LARC	Abel, I.	ISRAEL INST OF TECH	NSG 7373	Nissim, E.	41	3860
LARC	Bavuso, S. J.	JOHNS HOPKINS UNIV	NSG 1442	Masson, G. M.	45	2259
LARC	Everett, R. A., Jr.	LEHIGH UNIVERSITY	NGR 39-007-011	Erdogan, F.	21	3231
LARC	Campbell, J. W.	MARY BALDWIN COLLEGE	NSG 1209	Sawyer, J. O.	21	3629
LARC	Williams, T. S., Jr.	MASS INST OF TECH	NAS 1-9684	Biemann, K.	39	2408
LARC	Williams, T. S., Jr.	MASS INST OF TECH	NAS 1-9691	Rich, A.	51	2409
LARC	Williams, T. S., Jr.	MASS INST OF TECH	NAS 1-9702	Shapiro, I. I.	99	2410
LARC	McMaster, L. R.	MASS INST OF TECH	NAS 1-14932	Cunnold, D. M.	31	2411
LARC	Hubbard, H. H.	MASS INST OF TECH	NAS 1-15154	Ingard, K. V.	41	2412
LARC	Maddalon, D. V.	MASS INST OF TECH	NAS 1-15268	Taneja, N. K.	41	2413
LARC	Reid, H. J., Jr.	MASS INST OF TECH	NGL 22-009-640	Simpson, R. W.	41	2451
LARC	Queijo, M. J.	MASS INST OF TECH	NGR 22-009-701	Young, L. R.	41	2463
LARC	Rhodes, M. D.	MASS INST OF TECH	NGR 22-009-781	Mar, J. W.	41	2470
LARC	Hoad, D. R.	MASS INST OF TECH	NGR 22-009-818	Widnall, S. E.	41	2473
LARC	Byvik, C. E.	MASS INST OF TECH	NSG 1048	Wrighton, M. S.	12	2476
LARC	Byvik, C. E.	MASS INST OF TECH	NSG 1190	Gatos, H. C.	47	2477
LARC	Bland, S. R.	MASS INST OF TECH	NSG 1219	Harris, W. L.	41	2478
LARC	Armstrong, E. S.	MASS INST OF TECH	NSG 1312	Stein, G.	45	2479
LARC	Shoosmith, J. N.	MASS INST OF TECH	NSG 1323	Moses, J.	22	2480
LARC	Outlaw, R. A.	MASS INST OF TECH	NSG 1337	Gatos, H. C.	47	2481
LARC	Fichter, W. B.	MASS INST OF TECH	NSG 1349	Williams, J. H., Jr.	46	2482
LARC	Boyden, R. P.	MASS INST OF TECH	NSG 1356	Covert, E. E.	41	2483
LARC	Akey, N. D.	MASS INST OF TECH	NSG 1413	Fonstad, C. G.	13	2484
LARC	Armstrong, E. S.	MASS INST OF TECH	NSG 1447	Athans, M.	45	2485
LARC	Hefner, J. N.	MASS INST OF TECH	NSG 1453	Melcher, J. R.	41	2486

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TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	GRANT/ CONTRACT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
LARC	Boyden, R. P.	MASS INST OF TECH	NSG 1502	Covert, E. E.	41	2487
LARC	Price, H. L.	MASS INST OF TECH	NSG 1504	McGarry, F. J.	47	2488
LARC	Singh, J. J.	MASS INST OF TECH	NSG 1551	Greytak, T. J.	13	2489
LARC	Armstrong, E. S.	MASS INST OF TECH	NSG 1553	Stein, G.	45	2490
LARC	Hohl, F.	MIAMI UNIVERSITY	NSG 1383	Wells, W. E.	13	3104
LARC	Hohl, F.	MIAMI UNIVERSITY	NSG 1396	Wells, W. E.	13	3105
LARC	Hardin, J. C.	MICHIGAN STATE UNIV	NGR 23-004-091	Marx, G.	41	2562
LARC	South, J. C., Jr.	MISSISSIPPI STATE U	NGR 25-001-055	Thompson, J. F.	41	2684
LARC	Hall, A. W.	MISSISSIPPI STATE U	NSG 1083	Cross, E. J., Jr.	41	2685
LARC	Stewart, E. C.	MISSISSIPPI STATE U	NSG 1249	Bennett, A. G., Jr.	41	2686
LARC	Hogge, J. E.	MISSISSIPPI STATE U	NSG 1375	Butler, C. M.	22	2687
LARC	McLemore, H. C.	MISSISSIPPI STATE U	NSG 1402	Cross, E. J., Jr.	41	2688
LARC	Judd, J. H.	MISSISSIPPI STATE U	NSG 1454	Cross, E. J., Jr.	41	2689
LARC	Holmes, B. J.	MISSISSIPPI STATE U	NSG 1511	Cross, E. J., Jr.	41	2690
LARC	Young, P. R.	MISS UNIV FOR WOMEN	NSG 1539	Pratt, J. R.	12	2691
LARC	Darden, C. M.	NEW YORK UNIVERSITY	NGL 33-016-119	Ting, L.	41	2928
LARC	Huber, P. W.	NEW YORK UNIVERSITY	NGR 33-016-131	Agnone, A. M.	41	2929
LARC	South, J. C., Jr.	NEW YORK UNIVERSITY	NGR 33-016-167	Garabedian, P. R.	21	2930
LARC	Edwards, C. L.	NEW YORK UNIVERSITY	NSG 1444	Zakkay, V.	41	2933
LARC	Liu, C. H.	NEW YORK UNIVERSITY	NSG 1469	Ting, L.	41	2934
LARC	Rhodes, M. D.	NO CAR A&T STATE U	NSG 1296	Sharma, A. V.	47	3037
LARC	Allario, F.	NO CAR A&T STATE U	NSG 1346	Yu, C.	13	3038
LARC	Hutchby, J. A.	NO CAR A&T STATE U	NSG 1390	Alexander, W. E.	45	3039
LARC	Buckley, J. D.	NO CAR A&T STATE U	NSG 1516	Botros, B. M.	47	3040
LARC	Mayes, W. H.	NO CAROLINA STATE U	NGL 34-002-095	Horvath, J. J.	69	3044
LARC	Croswell, W. F.	NO CAROLINA STATE U	NGR 34-002-188	Kauffman, J. F.	45	3045
LARC	Meador, W. E.	NO CAROLINA STATE U	NSG 1058	Hassan, H. A.	13	3047
LARC	Crane, H. L.	NO CAROLINA STATE U	NSG 1077	Smetana, F. O.	41	3048
LARC	Hutchby, J. A.	NO CAROLINA STATE U	NSG 1116	Hauser, J. R.	45	3049
LARC	Mayes, W. H.	NO CAROLINA STATE U	NSG 1205	Hart, F. D.	13	3050
LARC	Husson, C.	NO CAROLINA STATE U	NSG 1353	Snyder, W. E.	45	3051
LARC	Hatfield, J. J.	NO CAROLINA STATE U	NSG 1355	Stroh, R. W.	45	3052
LARC	Brooks, T. F.	NO CAROLINA STATE U	NSG 1377	Hodgson, T. H.	41	3053
LARC	Campbell, J. F.	NO CAROLINA STATE U	NSG 1437	Dejarnette, F. R.	41	3054
LARC	Long, E. R., Jr.	NO CAROLINA STATE U	NSG 1463	Memory, J. D.	47	3055
LARC	Shoosmith, J. N.	NO CAROLINA STATE U	NSG 1532	Meyer, C. D., Jr.	21	3056
LARC	Park, S. K.	NO CAROLINA STATE U	NSG 1549	Roulier, J. A.	22	3057
LARC	Slemp, W. S.	NO CAROLINA STATE U	NSG 1562	Memory, J. D.	13	3058
LARC	Barnwell, R. W.	OHIO STATE UNIV	NAS 1-14406	Gregorek, G. M.	41	3106
LARC	Gilreath, M. C.	OHIO STATE UNIV	NSG 1498	Burnside, W. D.	45	3118
LARC	Reid, H. J., Jr.	OHIO UNIVERSITY	NGR 36-009-017	McFarland, R. H.	45	3132
LARC	Seiner, J. M.	OKLAHOMA STATE UNIV	NSG 1467	McLaughlin, D. K.	41	3176
LARC	Anderson, A. F.	OLD DOMINION UNIV	NAS 1-14193	Maygarden, E. M.	99	3630
LARC	Erickson, W. D.	OLD DOMINION UNIV	NGR 47-003-052	Roberts, A. S., Jr.	41	3632
LARC	Keating, G. M.	OLD DOMINION UNIV	NSG 1028	Goglia, G. L.	31	3635
LARC	Tripp, J. S.	OLD DOMINION UNIV	NSG 1079	Tcheng, P. L.	45	3636
LARC	Harris, J. E.	OLD DOMINION UNIV	NSG 1087	Goglia, G. L.	41	3637
LARC	Harris, J. E.	OLD DOMINION UNIV	NSG 1098	Cooke, C. H.	41	3638
LARC	Dodgen, J. A.	OLD DOMINION UNIV	NSG 1131	Kindle, E. C.	31	3639
LARC	Kershner, D. D.	OLD DOMINION UNIV	NSG 1143	Barna, P. S.	41	3640
LARC	Gapcynski, J. P.	OLD DOMINION UNIV	NSG 1152	Breedlove, W. J., Jr.	19	3641
LARC	Davis, J. G., Jr.	OLD DOMINION UNIV	NSG 1167	Thornton, E. A.	41	3642
LARC	Hellbaum, R. F.	OLD DOMINION UNIV	NSG 1177	Goglia, G. L.	45	3643
LARC	Harris, J. E.	OLD DOMINION UNIV	NSG 1226	Goglia, G. L.	41	3644
LARC	McCormick, M. P.	OLD DOMINION UNIV	NSG 1252	Deepak, A.	31	3645
LARC	Melfi, L. T., Jr.	OLD DOMINION UNIV	NSG 1271	Brock, F. J.	13	3646
LARC	Card, M. F.	OLD DOMINION UNIV	NSG 1279	Tweed, J.	49	3647
LARC	Peterson, J. B., Jr.	OLD DOMINION UNIV	NSG 1315	Goglia, G. L.	41	3648

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ARC	Wieting, A. R.	OLD DOMINION UNIV	NSG 1321	Thornton, E. A.	49	3649
ARC	Holmes, H. K.	OLD DOMINION UNIV	NSG 1324	Zuckerwar, A. J.	13	3650
ARC	Campbell, T. G.	OLD DOMINION UNIV	NSG 1331	Becher, J.	45	3651
ARC	McMaster, L. R.	OLD DOMINION UNIV	NSG 1341	Chu, W. P.	31	3652
ARC	Lamar, J. E.	OLD DOMINION UNIV	NSG 1357	Kuhlman, J. M.	41	3653
LARC	Hohl, F.	OLD DOMINION UNIV	NSG 1362	Harries, W. L.	13	3654
LARC	Hammond, C. E.	OLD DOMINION UNIV	NSG 1370	Goglia, G. L.	41	3655
LARC	Gainer, P. A.	OLD DOMINION UNIV	NSG 1379	Varanasi, M. R.	45	3656
LARC	Phillips, D. H.	OLD DOMINION UNIV	NSG 1393	Goglia, G. L.	12	3657
LARC	Reichle, H. G., Jr.	OLD DOMINION UNIV	NSG 1394	Kindle, E. C.	31	3658
LARC	Beck, S. M.	OLD DOMINION UNIV	NSG 1395	Kindle, E. C.	31	3659
LARC	Johnson, R. W.	OLD DOMINION UNIV	NSG 1441	Kuo, C. Y.	39	3660
LARC	Hanks, B. R.	OLD DOMINION UNIV	NSG 1459	Ibrahim, S. R.	46	3661
LARC	Graves, R. A., Jr.	OLD DOMINION UNIV	NSG 1464	Tiwari, S. N.	41	3662
LARC	Conway, E. J.	OLD DOMINION UNIV	NSG 1465	Heinbockel, J. H.	13	3663
LARC	Hoell, J. M.	OLD DOMINION UNIV	NSG 1466	Copeland, G. E.	31	3664
LARC	Groom, N. J.	OLD DOMINION UNIV	NSG 1473	Roberts, A. S., Jr.	49	3665
LARC	Browell, E. V.	OLD DOMINION UNIV	NSG 1477	Kindle, E. C.	39	3666
LARC	Creedon, J. F.	OLD DOMINION UNIV	NSG 1480	Breedlove, W. J., Jr.	41	3667
LARC	Harvey, W. D.	OLD DOMINION UNIV	NSG 1491	Goglia, G. L.	41	3668
LARC	Graves, R. A., Jr.	OLD DOMINION UNIV	NSG 1492	Tiwari, S. N.	41	3669
LARC	Sutton, K.	OLD DOMINION UNIV	NSG 1500	Tiwari, S. N.	49	3670
LARC	Kilgore, R. A.	OLD DOMINION UNIV	NSG 1503	Goglia, G. L.	41	3671
LARC	Dixon, S. C.	OLD DOMINION UNIV	NSG 1507	Thornton, E. A.	42	3672
LARC	Barnwell, R. W.	OLD DOMINION UNIV	NSG 1517	Cooke, C. H.	41	3673
LARC	Moul, M. T.	OLD DOMINION UNIV	NSG 1519	Liberty, S. R.	41	3674
LARC	Lisagor, W. B.	OLD DOMINION UNIV	NSG 1521	Cupschalk, S. G.	47	3675
LARC	Suttles, J. T.	OLD DOMINION UNIV	NSG 1522	Tiwari, S. N.	31	3676
LARC	Yates, E. C., Jr.	OLD DOMINION UNIV	NSG 1560	Kandil, O. A.	41	3677
LARC	Lamar, J. E.	OLD DOMINION UNIV	NSG 1561	Goglia, G. L.	41	3678
LARC	Fisher, B. D.	PENN STATE U-UNIV PK	NSG 1308	McCormick, B. W.	41	3260
LARC	Smith, R. F.	PENN STATE U-UNIV PK	NSG 1328	Stocker, F. R.	22	3261
LARC	Fripp, A. L.	PENN STATE U-UNIV PK	NSG 1387	White, W. B.	47	3262
LARC	Hoppe, J. C.	POLY INST OF NY	NSG 1198	Lederman, S.	42	2947
LARC	Rudy, D. H.	POLY INST OF NY	NSG 1244	Rubin, S. G.	41	2948
LARC	Salas, M. D.	POLY INST OF NY	NSG 1248	Moretti, G.	41	2949
LARC	Swanson, R. C.	POLY INST OF NY	NSG 1559	Rubin, S. G.	41	2950
LARC	Williams, T. S., Jr.	POMONA COLLEGE	NAS 1-11854	Baird, A. K.	12	1235
LARC	Williams, T. S., Jr.	PRINCETON UNIVERSITY	NAS 1-9705	Hargraves, R. B.	19	2762
LARC	Miller, G. K.	PRINCETON UNIVERSITY	NAS 1-13502	Sockel, E.	41	2763
LARC	Reid, H. J., Jr.	PRINCETON UNIVERSITY	NGL 31-001-252	Graham, D.	41	2777
LARC	Honaker, W. C.	PRINCETON UNIVERSITY	NSG 1070	Miles, R. B.	13	2781
LARC	Mixson, J. S.	PRINCETON UNIVERSITY	NSG 1253	Dowell, E. H.	41	2782
LARC	Roderick, G. L.	PURDUE UNIVERSITY	NSG 1278	Sun, C. T.	47	2109
LARC	Wood, G. M.	RENSSELAER POLY-NY	NSG 1360	White, F. A.	13	2970
LARC	Swann, R. T.	RENSSELAER POLY-NY	NSG 1510	Ansell, G. S.	47	2971
LARC	Beach, H. L., Jr.	RUTGERS UNIV-NEWARK	NSG 1314	Johnson, J. A., III	13	2801
LARC	Levine, J. S.	SAN DIEGO STATE UNIV	NSG 1430	Angione, R. J.	31	1236
LARC	Bushnell, D. M.	SOUTHERN METHODIST U	NSG 1548	Simpson, R. L.	41	3425
LARC	O'Neal, R. L.	SO UNIV-BATON ROUGE	NAS 1-15335	Scott, R. L., Jr.	31	2228
LARC	Williams, T. S., Jr.	STANFORD UNIVERSITY	NAS 1-9682	Levinthal, E. C.	99	1282
LARC	Williams, T. S., Jr.	STANFORD UNIVERSITY	NAS 1-9692	Lederberg, J.	51	1283
LARC	Williams, T. S., Jr.	STANFORD UNIVERSITY	NAS 1-9701	Tyler, G. L.	45	1284
LARC	Doggett, R. V., Jr.	STANFORD UNIVERSITY	NGL 05-020-243	Ashley, H.	41	1323
LARC	Outlaw, R. A.	STANFORD UNIVERSITY	NSG 1345	Madix, R. J.	47	1344
LARC	Outlaw, R. A.	STANFORD UNIVERSITY	NSG 1381	Madix, R. J.	47	1345
LARC	Shoosmith, J. N.	STANFORD UNIVERSITY	NSG 1443	Golub, G. H.	21	1346
LARC	Williams, T. S., Jr.	STATE U NY-STONY BRK	NAS 1-10493	Owens, T.	39	2993

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LARC	Stermer, R. L.	SYRACUSE UNIVERSITY	NSG 1462	Schroder, K.	47	3020
LARC	South, J. C., Jr.	TEXAS A&M UNIVERSITY	NSG 1174	Carlson, L. A.	41	3450
LARC	Lytle, C. D.	TEXAS A&M UNIVERSITY	NSG 1374	Painter, J. H.	45	3451
LARC	Chambers, J. R.	TEXAS A&M UNIVERSITY	NSG 1407	Chevalier, H. L.	41	3452
LARC	McCormick, M. P.	UNIV OF ARIZONA	NAS 1-14332	Herman, B. M.	31	1093
LARC	McMaster, L. R.	UNIV OF ARIZONA	NAS 1-14928	Herman, B. M.	31	1094
LARC	Hammond, C. E.	UNIV CALIF-L ANGELES	NGR 05-007-414	Friedmann, P.	41	1490
LARC	Keating, G. M.	UNIV CALIF-L ANGELES	NGR 05-007-416	Knuth, E. L.	13	1491
LARC	Sobieszczanski, J.	UNIV CALIF-L ANGELES	NSG 1490	Schmit, L. A.	49	1493
LARC	Cary, A. M., Jr.	UNIV CALIF-SAN DIEGO	NSG 1386	Libby, P. A.	41	1559
LARC	Card, M. F.	UNIV OF CINCINNATI	NSG 1185	Nayfeh, A. H.	49	3137
LARC	Monteith, J. H.	UNIV OF CINCINNATI	NSG 1486	Brown, D. L.	46	3138
LARC	Senn, E. H.	UNIV COLORADO-BOLDR	NSG 1476	Fosdick, L. D.	49	1702
LARC	Loendorf, D. D.	UNIV COLORADO-BOLDR	NSG 1489	Jordan, H. F.	49	1703
LARC	Deaton, J. W.	UNIV OF DELAWARE	NSG 1304	Pipes, R. B.	46	1767
LARC	Bowker, D. E.	UNIV OF DELAWARE	NSG 1398	Klemas, V.	39	1768
LARC	Cooper, P. A.	UNIV OF DELAWARE	NSG 1409	Pipes, R. B.	42	1769
LARC	Bowker, D. E.	UNIV OF DELAWARE	NSG 1433	Klemas, V.	39	1770
LARC	McWithey, R. R.	UNIV OF DELAWARE	NSG 1488	Vinson, J. R.	42	1771
LARC	Bushnell, D. M.	UNIV OF DELAWARE	NSG 1513	Danberg, J. E.	41	1772
LARC	McMaster, L. R.	UNIV OF DENVER	NAS 1-14929	Murcray, D. G.	31	1731
LARC	McCormack, M. P.	UNIV OF DENVER	NSG 1405	Goldman, A.	31	1743
LARC	Orr, H. D.	UNIV OF DENVER	NSG 1432	Murcray, D. G.	39	1744
LARC	McCormick, M. P.	UNIV OF DENVER	NSG 1439	Murcray, D. G.	31	1745
LARC	McCormick, M. P.	UNIV OF DENVER	NSG 1557	Murcray, D. G.	31	1746
LARC	Margason, R. J.	UNIV OF FLORIDA	NGL 10-005-127	Fearn, R. L.	41	1887
LARC	Walker, G. H.	UNIV OF FLORIDA	NSG 1425	Li, S. S.	45	1891
LARC	Reichle, H. G., Jr.	UNIV OF FLORIDA	NSG 1497	Chameides, W. L.	31	1892
LARC	Morgan, H. L., Jr.	UNIV OF FLORIDA	NSG 1542	Fearn, R. L.	41	1893
LARC	Williams, T. S., Jr.	UNIV HOUSTON-HOUSTON	NAS 1-9685	Oro, J.	39	3466
LARC	Maestrello, L.	UNIV HOUSTON-HOUSTON	NSG 1475	Hussain, A. K.	41	3483
LARC	Evans, J. S.	UNIV ILLINOIS-CHICGO	NSG 1150	Chung, P. M.	41	2061
LARC	Salmirs, S.	UNIV ILLINOIS-URBANA	NAS 1-14731	Jensen, R. S.	41	2063
LARC	Jordan, F. L., Jr.	UNIV ILLINOIS-URBANA	NSG 1400	Ormsbee, A. I.	19	2072
LARC	Jordan, F. L., Jr.	UNIV ILLINOIS-URBANA	NSG 1434	Ormsbee, A. I.	41	2073
LARC	Will, R. W.	UNIV ILLINOIS-URBANA	NSG 1471	Campbell, R. H.	21	2074
LARC	Hohl, F.	UNIV ILLINOIS-URBANA	NSG 1547	Miley, G. H.	13	2075
LARC	Coffee, C. W., Jr.	UNIV OF IOWA	NAS 1-13129	VanAllen, J. A.	13	2145
LARC	Rummler, D. R.	UNIV OF IOWA	NSG 1499	Wu, H. C.	47	2158
LARC	Crane, H. L.	UNIV OF KANSAS	NGR 17-002-072	Kohlman, D. L.	41	2179
LARC	Pride, R. A.	UNIV OF KANSAS	NGR 17-004-027	Lenzen, K. H.	41	2180
LARC	Lamar, J. E.	UNIV OF KANSAS	NSG 1046	Roskam, J.	41	2181
LARC	Campbell, J. F.	UNIV OF KANSAS	NSG 1139	Lan, C. E.	41	2182
LARC	Rummler, D. R.	UNIV OF KANSAS	NSG 1269	Zerwekh, R. P.	47	2183
LARC	Howell, W. E.	UNIV OF KANSAS	NSG 1281	Reese, C. D.	47	2184
LARC	Stephens, D. G.	UNIV OF KANSAS	NSG 1301	Roskam, J.	41	2185
LARC	Schroeder, L. C.	UNIV OF KANSAS	NSG 1397	Moore, R. K.	33	2186
LARC	Pritchard, E. B.	UNIV OF KANSAS	NSG 1533	Lenzen, K. H.	39	2187
LARC	Campbell, J. F.	UNIV OF KANSAS	NSG 1537	Lan, C. E.	41	2188
LARC	Holmes, B. J.	UNIV OF KANSAS	NSG 1543	Roskam, J.	41	2189
LARC	Croswell, W. F.	UNIV OF KANSAS	NSG 1554	Moore, R. K.	45	2190
LARC	Reichle, H. G., Jr.	UNIV OF KENTUCKY	NSG 1424	Peters, L. K.	31	2209
LARC	Reichle, H. G., Jr.	UNIV OF KENTUCKY	NSG 1501	Peters, L. K.	31	2210
LARC	Fralich, R. W.	UNIVERSITY OF LOWELL	NSG 1295	McElman, J. A.	41	2547
LARC	Browell, E. V.	UNIV MARYLAND-COL PK	NAS 1-15378	Wilkerson, T. D.	39	2279
LARC	Browell, E. V.	UNIV MARYLAND-COL PK	NSG 1336	Wilkerson, T. D.	31	2317
LARC	Benz, H. F.	UNIV MARYLAND-COL PK	NSG 1468	Lin, H. C.	45	2318
LARC	Schy, A. A.	UNIV MARYLAND-COL PK	NSG 1558	Wang, S. H.	45	2319

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Spence, D. C.	UNIV OF MASS-AMHERST	NAS 1-15162	Wise, D. U.	31	2548
Lisagor, W. B.	UNIV OF MIAMI	NSG 1283	Craig, H. L., Jr.	47	1912
Tucker, J. H.	UNIV OF MIAMI	NSG 1436	Tapia, M. A.	21	1913
Russell, J. M., III	UNIV MICH-ANN ARBOR	NAS 1-14394	Drayson, S. R.	31	2565
Jones, J. L.	UNIV MICH-ANN ARBOR	NAS 1-15333	Felbeck, D. K.	47	2566
McCarty, J. L.	UNIV MICH-ANN ARBOR	NGL 23-005-010	Clark, S. R.	41	2597
Fichter, W. B.	UNIV MICH-ANN ARBOR	NGR 23-005-528	Felbeck, D. K.	47	2604
Pellett, G. L.	UNIV MICH-ANN ARBOR	NSG 1243	Dingle, A. N.	31	2606
Migneault, G. E.	UNIV MICH-ANN ARBOR	NSG 1306	Meyer, J. F.	45	2607
Czarnecki, K. R.	UNIV MICH-ANN ARBOR	NSG 1326	Adamson, T. C., Jr.	41	2608
Russell, J. M., III	UNIV MICH-ANN ARBOR	NSG 1373	Drayson, S. R.	31	2609
Dunning, R. S.	UNIV MICH-ANN ARBOR	NSG 1448	Vinh, N. X.	41	2610
Smith, G. L.	UNIV MICH-ANN ARBOR	NSG 1482	Bartman, F. L.	31	2611
McCarty, J. L.	UNIV MICH-ANN ARBOR	NSG 1494	Clark, S. K.	41	2612
Beswick, A. G.	U MINN-MNPLS-ST PAUL	NSG 1431	Mauersberger, K.	31	2654
Migneault, G. E.	UNIV MO-COLUMBIA	NSG 1540	Miller, D. R.	22	2705
Mixson, J. S.	UNIV MO-ROLLA	NSG 1050	Koval, L. R.	41	2710
Graves, R. A., Jr.	UNIV MO-ROLLA	NSG 1369	Biolsi, L.	12	2711
Hefner, J. N.	UNIV MO-ROLLA	NSG 1452	Patterson, G. K.	41	2712
Tanner, J. A.	UNIV NEBRASKA-LINCLN	NSG 1506	Baumgarten, J. R.	46	2739
Williams, T. S., Jr.	UNIV OF NEW MEXICO	NAS 1-11855	Keil, K.	12	2823
Wood, G. M.	UNIV OF NEW ORLEANS	NSG 1460	Ioup, G. E.	47	2239
Somers, D. M.	UNIV OF NOTRE DAME	NSG 1419	Mueller, T. J.	41	2122
Bryant, F. R.	UNIV OKLAHOMA-NORMAN	NSG 1404	Kahng, S. K.	13	3186
Gross, C.	UNIV OKLAHOMA-NORMAN	NSG 1481	Kahng, S. K.	45	3187
Pritchard, E. B.	UNIV OF RHODE ISLAND	NSG 1008	Spaulding, M. L.	49	3312
Campbell, J. W.	UNIV OF RHODE ISLAND	NSG 1461	Cornillon, P. C.	33	3313
Campbell, J. W.	UNIV OF RHODE ISLAND	NSG 1495	Spaulding, M. L.	33	3314
Katzberg, S. J.	UNIV SO CAROLINA-COL	NSG 1334	Zingmark, R. G.	39	3323
Jobson, D. J.	UNIV SO CAROLINA-COL	NSG 1523	Zingmark, R. G.	39	3324
Park, S. K.	UNIV OF SO FLORIDA	NSG 1159	Tsokos, C. P.	21	1917
Tolson, R. H.	UNIV OF SO FLORIDA	NSG 1420	Smith, H. C.	11	1918
Park, S. K.	UNIV OF SO FLORIDA	NSG 1487	Tsokos, C. P.	21	1919
Hall, J. B., Jr.	UNIV OF SO FLORIDA	NSG 7242	Wilkins, R. D.	11	1921
Kilgore, R. A.	UNIV OF SOUTHAMPTON	NSG 7172	Goodyer, M. J.	41	3856
Maestrello, L.	UNIV OF SOUTHERN CAL	NSG 1221	Laufer, J.	41	1642
Stein, M.	UNIV OF SOUTHERN CAL	NSG 1401	Seide, P.	41	1643
Lewis, B. W.	UNIV OF SOUTHERN CAL	NSG 1528	Walsh, D.	13	1644
Conway, E. J.	UNIV OF SOUTHERN CAL	NSG 1536	Kroger, F. A.	47	1645
Wood, G. M.	UNIV SO MISSISSIPPI	NSG 1515	Rayborn, G. H.	19	2696
Melfi, L. T., Jr.	UNIV OF SYDNEY	NSG 7272	Bird, G. A.	13	3850
Hammond, C. E.	UNIV TENNESSEE-KNOXV	NSG 1171	Lumsdaine, E.	41	3361
Bland, S. R.	UNIV TENNESSEE-KNOXV	NSG 1224	Kimble, K. R.	41	3362
Smith, R. E.	UNIV TENNESSEE-KNOXV	NSG 1391	Baker, A. J.	21	3363
Smith, R. E.	UNIV TENNESSEE-KNOXV	NSG 1529	Baker, A. J.	22	3364
Robinson, J. C.	U TENNESSEE-NASHVILE	NSG 1455	Blackburn, C. L.	41	3369
Hilton, D. A.	UNIV TEXAS-AUSTIN	NAS 1-14160	Blackstock, D. T.	41	3495
Spence, D. C.	UNIV TEXAS-AUSTIN	NAS 1-15164	Baker, V. R.	31	3496
Shoosmith, J. N.	UNIV TEXAS-AUSTIN	NSG 1440	Daniel, J. W.	21	3522
Shipman, F. S.	UNIV TEXAS-AUSTIN	NSG 1446	Browne, J. C.	22	3523
Will, R. W.	UNIV TEXAS-AUSTIN	NSG 1479	Browne, J. C.	22	3524
Schiess, J. R.	UNIV TEXAS-AUSTIN	NSG 1544	Cline, A. K.	22	3525
Breckenridge, R. A.	UNIV TEXAS-EL PASO	NSG 1316	Eastman, M. P.	13	3569
Foye, R. L.	UNIV OF TORONTO	NSG 7219	Tennyson, R. C.	47	3851
Baker, D. J.	UNIV OF TORONTO	NSG 7409	Tennyson, R. C.	47	3852
Williams, T. S., Jr.	UNIV OF UTAH	NAS 1-12705	Shorthill, R. W.	19	3581
Card, M. F.	UNIV OF UTAH	NSG 1313	Resch, R. D.	49	3589
Fripp, A. L.	UNIV OF UTAH	NSG 1534	Rosenberger, F. E.	47	3590

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LARC	Martin, D. J.	UNIV OF VIRGINIA	NAS 1-12754	Barnes, D. W.	99	3681
LARC	Will, R. W.	UNIV OF VIRGINIA	NAS 1-14862	Berman, W. J.	22	3682
LARC	Conner, D. W.	UNIV OF VIRGINIA	NAS 1-14908	Kuhlthau, A. R.	49	3683
LARC	Spence, D. C.	UNIV OF VIRGINIA	NAS 1-15160	Johnson, R. E.	31	3684
LARC	Kilgore, R. A.	UNIV OF VIRGINIA	NSG 1010	Zapata, R. N.	41	3691
LARC	Bundick, W. T.	UNIV OF VIRGINIA	NSG 1128	McAlpine, G. A.	45	3692
LARC	Mayes, W. H.	UNIV OF VIRGINIA	NSG 1180	Jacobson, I. D.	41	3693
LARC	Bowles, R. L.	UNIV OF VIRGINIA	NSG 1335	Brown, R. L., Jr.	21	3694
LARC	Hueschen, R. M.	UNIV OF VIRGINIA	NSG 1388	Cook, G. E.	49	3695
LARC	Tapscott, R. J.	UNIV OF VIRGINIA	NSG 1399	Jacobson, I. D.	49	3696
LARC	Barker, L. E.	UNIV OF VIRGINIA	NSG 1403	Parrish, E. A., Jr.	22	3697
LARC	Humes, D. H.	UNIV OF VIRGINIA	NSG 1427	Singer, S. F.	11	3698
LARC	Will, R. W.	UNIV OF VIRGINIA	NSG 1458	Pratt, T. W.	22	3699
LARC	Deloach, R.	UNIV OF VIRGINIA	NSG 1509	Jacobson, I. D.	69	3700
LARC	Williams, T. S., Jr.	UNIV OF WASHINGTON	NAS 1-9694	Leovy, C. B.	31	3756
LARC	Russell, J. M., III	UNIV OF WASHINGTON	NAS 1-14341	Leovy, C. B.	31	3757
LARC	Heyson, H. H.	UNIV OF WASHINGTON	NGL 48-002-035	Rae, W. H.	41	3766
LARC	Northam, G. B.	UNIV WISC-MADISON	NAS 1-14136	Weinman, J. A.	31	3796
LARC	Campbell, J. W.	UNIV WISC-MADISON	NSG 1196	Johnson, R. A.	21	3821
LARC	Young, W. H., Jr.	UNIV WISC-MILWAUKEE	NGR 50-007-001	Bratanow, T.	41	3837
LARC	Hedgepeth, K. D.	UNIV OF WYOMING	NAS 1-13797	Pepin, T. J.	31	3839
LARC	McCormick, M. P.	UNIV OF WYOMING	NAS 1-14373	Pepin, T. J.	31	3840
LARC	McMaster, L. R.	UNIV OF WYOMING	NAS 1-14931	Pepin, T. J.	31	3841
LARC	McMaster, L. R.	UNIV OF WYOMING	NAS 1-15377	Hofmann, D. J.	31	3842
LARC	McCormick, M. P.	UNIV OF WYOMING	NSG 1518	Pepin, T. J.	31	3846
LARC	Hohl, F.	VANDERBILT UNIVERSTY	NSG 1235	Lee, J. H.	13	3376
LARC	Exton, R. J.	VANDERBILT UNIVERSTY	NSG 1408	Tellinghuisen, J. B.	13	3377
LARC	Bell, V. L.	VIRGINIA COMNWLTH U	NGR 47-002-041	Stump, B. L.	12	3705
LARC	Martin, D. J.	VIRGINIA POLY INST	NAS 1-13175	Robertson, R. M.	49	3709
LARC	Posey, J.	VIRGINIA POLY INST	NAS 1-13884	Nayfeh, A. H.	13	3710
LARC	Anderson, A. F.	VIRGINIA POLY INST	NAS 1-15080	Unavailable	99	3711
LARC	Erickson, W. D.	VIRGINIA POLY INST	NGR 47-004-090	Drew, D. R.	41	3718
LARC	Davis, J. G., Jr.	VIRGINIA POLY INST	NGR 47-004-129	Herakovich, C. T.	49	3719
LARC	Montgomery, R. C.	VIRGINIA POLY INST	NSG 1015	Cliff, E. M.	41	3720
LARC	Smith, A.	VIRGINIA POLY INST	NSG 1020	Sanzone, G.	13	3721
LARC	Johnston, N. J.	VIRGINIA POLY INST	NSG 1064	Wolfe, J. F.	12	3722
LARC	Young, P. R.	VIRGINIA POLY INST	NSG 1085	Mason, J. G.	12	3723
LARC	Progar, D. J.	VIRGINIA POLY INST	NSG 1124	Wightman, J. P.	12	3724
LARC	Montgomery, R. C.	VIRGINIA POLY INST	NSG 1239	VanLandingham, H. F.	41	3725
LARC	Hoffman, E. L.	VIRGINIA POLY INST	NSG 1250	Herakovich, C. T.	49	3726
LARC	Hoffman, E. L.	VIRGINIA POLY INST	NSG 1254	Stinchcomb, W. W.	46	3727
LARC	Hefner, J. N.	VIRGINIA POLY INST	NSG 1255	Nayfeh, A. H.	41	3728
LARC	Yates, E. C., Jr.	VIRGINIA POLY INST	NSG 1262	Mook, D. T.	41	3729
LARC	Maahs, H. G.	VIRGINIA POLY INST	NSG 1275	Frair, K. L.	19	3730
LARC	Miserentino, R.	VIRGINIA POLY INST	NSG 1276	Hallauer, W. L., Jr.	49	3731
LARC	StClair, T. L.	VIRGINIA POLY INST	NSG 1286	Ogliaruso, M. A.	12	3732
LARC	Creedon, J. F.	VIRGINIA POLY INST	NSG 1354	VanLandingham, H. F.	41	3733
LARC	Hefner, J. N.	VIRGINIA POLY INST	NSG 1358	Saric, W. S.	41	3734
LARC	Whitcomb, J. D.	VIRGINIA POLY INST	NSG 1364	Reifsnider, K. L.	47	3735
LARC	Campbell, J. W.	VIRGINIA POLY INST	NSG 1376	Myers, R. H.	21	3736
LARC	Tenney, D. R.	VIRGINIA POLY INST	NSG 1382	Louthan, M. R., Jr.	47	3737
LARC	Pellett, G. L.	VIRGINIA POLY INST	NSG 1389	Wightman, J. P.	12	3738
LARC	Slemp, W. S.	VIRGINIA POLY INST	NSG 1428	Taylor, L. T.	12	3739
LARC	Tenney, D. R.	VIRGINIA POLY INST	NSG 1470	Houska, C. R.	47	3740
LARC	StClair, A. K.	VIRGINIA POLY INST	NSG 1512	McGrath, J. E.	12	3741
LARC	Moss, J. N.	VIRGINIA POLY INST	NSG 1520	Lewis, C. H.	41	3742
LARC	StClair, T. L.	VIRGINIA POLY INST	NSG 1524	Wolfe, J. F.	12	3743
LARC	Straeter, T. A.	VIRGINIA POLY INST	NSG 1525	Frair, L. C.	22	3744

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LARC	Miserentino, R.	VIRGINIA POLY INST	NSG 1526	Hallauer, W. L., Jr.	46	3745
LARC	Montgomery, R. C.	VIRGINIA POLY INST	NSG 1527	VanLandingham, H. F.	45	3746
LARC	Tenney, D. R.	VIRGINIA POLY INST	NSG 1531	Unnam, J.	47	3747
LARC	Hayduk, R. J.	VIRGINIA POLY INST	NSG 1546	Kamat, M. P.	49	3748
LARC	Lansing, D. L.	VIRGINIA STATE COL	NGL 47-014-009	Agrawal, K. M.	41	3754
LARC	Singh, J. J.	VIRGINIA STATE COL	NSG 1342	Stronach, C. E.	13	3755
LARC	Williams, T. S., Jr.	WASHINGTON UNIVERSTY	NAS 1-13889	Arvidson, R. E.	39	2717
LARC	Heyman, J. S.	WASHINGTON UNIVERSTY	NSG 1392	Miller, J. G.	13	2722
LARC	Maestrello, L.	WAYNE STATE UNIV	NSG 1330	Chow, P. L.	41	2635
LARC	Morris, C. E., Jr.	WEST VIRGINIA UNIV	NSG 1412	Gibbs, E. H.	41	3792
LARC	Noonan, K. W.	WICHITA STATE UNIV	NGR 17-003-021	Rodgers, E. J.	41	2200
LARC	McGhee, R. J.	WICHITA STATE UNIV	NSG 1165	Wentz, W. H., Jr.	41	2201
LARC	Queijo, M. J.	WRIGHT STATE UNIV	NSG 1417	Wells, W. R.	41	3172
LARC	Wood, G. M.	XAVIER UNIV-LA	NSG 1361	Ioup, J. W.	13	2241
LERC	Bifano, W. J.	ARIZONA STATE UNIV	DEN 3 50	Bahr, D. M.	72	1076
LERC	Hippensteele, S. A.	ARIZONA STATE UNIV	NSG 3075	Metzger, D. E.	41	1086
LERC	Morris, J. F.	ARIZONA STATE UNIV	NSG 7019	Jacobson, D. L.	13	1087
LERC	Decker, A. J.	AUBURN UNIV-AUBURN	NSG 3109	Ranson, W. F.	49	1029
LERC	Herbell, T. P.	BROWN UNIVERSITY	NSG 3118	Richman, M. H.	47	3311
LERC	Gluyas, R. E.	BUCKNELL UNIVERSITY	NSG 3136	Snyder, W. J.	43	3209
LERC	Coe, H. H.	CAL STATE U-NRTHRDGE	NSG 3065	Nypan, L. J.	46	1228
LERC	Priem, R. J.	CAL STATE U-SACRAMEN	NGR 05-058-003	Reardon, F. H.	42	1231
LERC	Witzke, W. R.	CARNEGIE-MELLON UNIV	NAS 3-20370	Bhat, G. K.	47	3210
LERC	Srawley, J. E.	CARNEGIE-MELLON UNIV	NGR 39-087-053	Swedlow, J. L.	46	3212
LERC	Srawley, J. E.	CARNEGIE-MELLON UNIV	NSG 3172	Swedlow, J. L.	46	3213
LERC	Cunningham, R. E.	CARNEGIE-MELLON UNIV	NSG 3202	Hughes, W. F.	46	3214
LERC	Labus, T. M.	CASE WESTERN RESERVE	NAS 3-21046	Ostrack, S.	46	3061
LERC	Smetana, J.	CASE WESTERN RESERVE	NAS 3-21365	Collin, R. E.	49	3062
LERC	Glasgow, T. K.	CASE WESTERN RESERVE	NGL 36-003-094	Ebert, L. J.	47	3067
LERC	Gray, H. R.	CASE WESTERN RESERVE	NGR 36-027-051	Hehemann, R. H.	47	3069
LERC	Bishop, A. R.	CASE WESTERN RESERVE	NGR 36-027-064	Reshotko, E.	41	3070
LERC	Kohl, F. J.	CASE WESTERN RESERVE	NSG 3009	Mateescu, G. D.	12	3072
LERC	Fortini, A.	CASE WESTERN RESERVE	NSG 3040	Dybbs, A.	47	3073
LERC	Bober, L. J.	CASE WESTERN RESERVE	NSG 3058	Reshotko, E.	41	3074
LERC	Sockol, P. M.	CASE WESTERN RESERVE	NSG 3062	Reshotko, E.	41	3075
LERC	Dunning, J. W., Jr.	CASE WESTERN RESERVE	NSG 3074	Angus, J. C.	43	3076
LERC	Neustadter, H. E.	CASE WESTERN RESERVE	NSG 3078	Zacks, S.	21	3077
LERC	Stevens, G. H.	CASE WESTERN RESERVE	NSG 3085	Pao, Y. H.	45	3078
LERC	Anderson, B. H.	CASE WESTERN RESERVE	NSG 3115	Lynch, W. C.	41	3079
LERC	Weigand, A. J.	CASE WESTERN RESERVE	NSG 3126	Gibbons, D. F.	49	3080
LERC	Mirtich, M. J.	CASE WESTERN RESERVE	NSG 3131	Topich, J. A.	19	3081
LERC	Serafini, T. T.	CASE WESTERN RESERVE	NSG 3140	Koenig, J. L.	12	3082
LERC	Lauver, R. W.	CASE WESTERN RESERVE	NSG 3142	Ritchey, W. M.	12	3083
LERC	Weigand, A. G.	CASE WESTERN RESERVE	NSG 3151	Gibbons, D. F.	53	3084
LERC	Purvis, C. K.	CASE WESTERN RESERVE	NSG 3197	Gordan, W. L.	13	3085
LERC	Fordyce, J. S.	CASE WESTERN RESERVE	NSG 3203	Liu, C. C.	43	3086
LERC	Riddlebaugh, S. M.	CASE WESTERN RESERVE	NSG 3206	Greber, I.	41	3087
LERC	Anderson, B. H.	CASE WESTERN RESERVE	NSG 3207	Parke, F. I.	41	3088
LERC	Hingst, W. R.	CASE WESTERN RESERVE	NSG 3211	Greber, I.	41	3089
LERC	Labus, T. L.	CASE WESTERN RESERVE	NSG 3221	Ostrach, S.	13	3090
LERC	Hirschberg, M. H.	CASE WESTERN RESERVE	NSG 7035	Manson, S. S.	47	3092
LERC	Deissler, R. G.	CATHOLIC UNIVERSITY	NGR 09-005-099	Ling, S. C.	41	1779
LERC	Fordyce, J. S.	CENTRAL ST UNIV-OHIO	NGR 36-033-003	Craft, T. J., Sr.	51	3093
LERC	Young, S. G.	CHICAGO STATE UNIV	NSG 3030	Treptow, R. S.	99	2008
LERC	Braun, W. H.	CITY COLLEGE OF N Y	NSG 3174	Weinstein, H.	49	2844
LERC	Rotnem, J. O.	CLARKSON COL OF TECH	NSG 3191	Arozullah, M.	45	2848
LERC	Weigand, A. J.	CLEMSON UNIV-CLEMSON	NSG 3225	Park, J. B.	53	3319
LERC	Townsend, D. P.	CLEVELAND STATE UNIV	NAS 3-18547	Kasuba, R.	46	3094

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LERC	Brown, G. V.	CLEVELAND STATE UNIV	NSG 3144	Chu, C. W.	13	3097
LERC	Ashbrook, R. L.	CLEVELAND STATE UNIV	NSG 3155	Yeh, H. C.	47	3098
LERC	Nieberding, W. C.	CLEVELAND STATE UNIV	NSG 3222	Maisel, J. F.	45	3099
LERC	Beach, R. F.	CLEVELAND STATE UNIV	NSG 3223	Burghart, J. H.	49	3100
LERC	Reynolds, T. W.	COLORADO SCH OF MINE	NSG 3122	Daniel, S. R.	12	1648
LERC	Priem, R. J.	COLORADO STATE UNIV	NGR 06-002-095	Mitchell, C. E.	42	1658
LERC	Kerslake, W. R.	COLORADO STATE UNIV	NGR 06-002-112	Wilbur, P. J.	46	1661
LERC	Mantenieks, M. A.	COLORADO STATE UNIV	NGR 06-002-147	Wilhelm, H. E.	42	1662
LERC	Brown, G. V.	COLORADO STATE UNIV	NGR 06-002-159	Etters, R. D.	13	1663
LERC	Rawlin, V. K.	COLORADO STATE UNIV	NSG 3011	Kaufman, H. R.	42	1668
LERC	Domitz, S.	COLORADO STATE UNIV	NSG 3038	Kaufman, H. R.	19	1669
LERC	Chubb, D. L.	COLORADO STATE UNIV	NSG 3060	Collins, G. J.	13	1670
LERC	Mirtich, M. J.	COLORADO STATE UNIV	NSG 3086	Kaufman, H. R.	13	1671
LERC	Sockol, P. M.	COLORADO STATE UNIV	NSG 3127	Sadeh, W. Z.	41	1672
LERC	Stevens, N. J.	COLORADO STATE UNIV	NSG 3145	Yadlowsky, E. J.	13	1673
LERC	Sater, B. L.	COLORADO STATE UNIV	NSG 3167	Sites, J. R.	13	1674
LERC	Grier, N. T.	COLORADO STATE UNIV	NSG 3196	Kaufman, H. R.	13	1675
LERC	Glasgow, T. K.	COLUMBIA UNIVERSITY	NSG 3050	Tien, J. K.	47	2871
LERC	Flood, D. J.	CORNELL UNIVERSITY	NGR 33-010-188	Ashcroft, N. W.	13	2906
LERC	Aron, P. R.	CORNELL UNIVERSITY	NGR 33-010-189	Ruoff, A. L.	47	2907
LERC	Marek, C. J.	CORNELL UNIVERSITY	NSG 3019	Gouldin, F. C.	41	2914
LERC	Zeleznik, F. J.	DREXEL UNIVERSITY	NSG 3090	Rosen, G. H.	21	3219
LERC	Grimes, H. H.	DREXEL UNIVERSITY	NSG 3128	Lawley, A.	47	3220
LERC	Hansen, I. G.	DUKE UNIVERSITY	NSG 3157	Wilson, T. G.	45	3034
LERC	Ford, W. F.	DUKE UNIVERSITY	NSG 3160	Smith, D. A.	21	3035
LERC	Jackson, H. D.	GEORGE WASHINGTON U	NSG 3130	Wood, F. B.	99	1812
LERC	Poley, W. A.	GEORGIA INST OF TECH	DEN 3 73	Zimmer, R. P.	45	1929
LERC	Stevens, G. H.	GEORGIA INST OF TECH	NAS 3-20110	Zimmer, R. P.	42	1935
LERC	Huff, R. G.	GEORGIA INST OF TECH	NSG 3015	Strahle, W. C.	13	1957
LERC	Baumeister, K. J.	GEORGIA INST OF TECH	NSG 3036	Zinn, B. T.	41	1958
LERC	Priem, R. J.	GEORGIA INST OF TECH	NSG 3052	Korkan, K. D.	42	1959
LERC	Jones, W. R., Jr.	GEORGIA INST OF TECH	NSG 3106	Winer, W. O.	46	1960
LERC	Feiler, C. E.	GEORGIA INST OF TECH	NSG 3228	Cassonova, R. A.	13	1961
LERC	Braun, W. H.	ILL INST OF TECH	NSG 3141	Weinstein, H.	49	2011
LERC	Groeneweg, J. F.	ILL INST OF TECH	NSG 3220	Nagib, H. M.	41	2012
LERC	Sockol, P. M.	IND U-PURDUE-INDAPLS	NSG 3183	Bodonyi, R. J.	41	2095
LERC	Sockol, P. M.	IOWA STATE UNIV	NSG 3033	Serovy, G. K.	41	2143
LERC	Ludwig, L. P.	ISRAEL INST OF TECH	NSG 7317	Etsion, I.	46	3859
LERC	Anderson, W. J.	JACKSON STATE UNIV	NSG 3004	Chu, C. S.	49	2674
LERC	Wintucky, E. G.	KENT STATE UNIV-KENT	NSG 3159	Johnson, D. L.	47	3102
LERC	Ashbrook, R. L.	LEHIGH UNIVERSITY	NGL 39-007-007	Kraft, R. W.	47	3230
LERC	Batterton, P. G.	LEHIGH UNIVERSITY	NSG 3162	Rockwell, D. O.	41	3236
LERC	Chamis, C. C.	LEHIGH UNIVERSITY	NSG 3179	Sih, G. C.	49	3237
LERC	Sovey, J. S.	LEHIGH UNIVERSITY	NSG 3193	Micale, F. J.	47	3238
LERC	Crouse, J. E.	MASS INST OF TECH	NAS 3-20473	Thompkins, W. T., Jr.	41	2417
LERC	McNally, W. D.	MASS INST OF TECH	NGL 22-009-383	Kerrebrock, J. L.	41	2448
LERC	Holms, A. G.	MASS INST OF TECH	NGR 22-009-339	Witmer, E. A.	41	2454
LERC	Mularz, E. J.	MASS INST OF TECH	NGR 22-009-378	Heywood, J. B.	43	2455
LERC	Weinberg, I.	MASS INST OF TECH	NSG 3017	Gatos, H. C.	13	2503
LERC	Chamis, C. C.	MASS INST OF TECH	NSG 3044	McGarry, F. G.	49	2504
LERC	Scheuermann, C. M.	MASS INST OF TECH	NSG 3046	Flemings, M. C.	47	2505
LERC	Gluyas, R. E.	MASS INST OF TECH	NSG 3061	Senturia, S. D.	19	2506
LERC	Vary, A.	MASS INST OF TECH	NSG 3064	Williams, J. H., Jr.	47	2507
LERC	Brabbs, T. A.	MASS INST OF TECH	NSG 3076	Hoult, D. P.	41	2508
LERC	Adamczyk, J. J.	MASS INST OF TECH	NSG 3079	Kerrebrock, J. L.	41	2509
LERC	Reinmann, J. J.	MASS INST OF TECH	NSG 3088	Lax, B.	13	2510
LERC	Norgren, C. T.	MASS INST OF TECH	NSG 3102	Howard, J. B.	43	2511
LERC	Baumeister, K. J.	MASS INST OF TECH	NSG 3129	Ungard, K. U.	41	2512

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LERC	Pelouch, J. J., Jr.	MASS INST OF TECH	NSG 3175	Kolm, H. H.	42	2513
LERC	Braun, W. H.	MASS INST OF TECH	NSG 3187	Kerrebrock, J. L.	49	2514
LERC	Adamczyk, J. J.	MASS INST OF TECH	NSG 3208	Greitzer, E. M.	41	2515
LERC	Vary, A.	MASS INST OF TECH	NSG 3210	Williams, J. H., Jr.	47	2516
LERC	Barrett, C. A.	MICHIGAN TECH UNIV	NSG 3215	Heckel, R. W.	47	2564
LERC	Salzman, J. A.	NEW MEX ST U-LAS CR	NSG 3069	Armstrong, R. L.	13	2820
LERC	Labus, T. L.	NEW YORK UNIVERSITY	NSG 3059	Keller, J. B.	49	2935
LERC	Godlewski, M. P.	NO CAROLINA STATE U	NGR 34-002-195	Hauser, J. R.	45	3046
LERC	Ludwig, L. P.	NORTHWESTERN UNIV	NAS 3-21261	Burton, R. A.	46	2013
LERC	Behrendt, D. R.	NORTHWESTERN UNIV	NGR 14-007-131	Waber, J. T.	13	2016
LERC	Ludwig, L. P.	NORTHWESTERN UNIV	NSG 3039	Burton, R. A.	47	2020
LERC	Zaretsky, E. V.	NORTHWESTERN UNIV	NSG 3042	Cheng, H. S.	46	2021
LERC	Coy, J. J.	NORTHWESTERN UNIV	NSG 3143	Cheng, H. S.	46	2022
LERC	Wedeven, L. D.	NORTHWESTERN UNIV	NSG 3149	Cheng, H. S.	46	2023
LERC	Gray, H. R.	OHIO STATE UNIV	NGL 36-008-051	Beck, F. H.	47	3113
LERC	Bill, R. C.	OHIO STATE UNIV	NSG 3164	Black, J. T.	47	3125
LERC	Britsch, W. R.	PENN STATE U-UNIV PK	NGL 39-009-007	Lakshminarayana, B.	41	3253
LERC	Hirschberg, M. H.	PENN STATE U-UNIV PK	NGR 39-009-034	Zamrik, S. Y.	47	3256
LERC	Priem, R. J.	PENN STATE U-UNIV PK	NGR 39-009-077	Faeth, G. M.	42	3257
LERC	Stone, J. R.	PENN STATE U-UNIV PK	NGR 39-009-270	Arndt, R. E.	41	3259
LERC	Heidmann, M. F.	PENN STATE U-UNIV PK	NSG 3012	Lakshminarayana, B.	41	3265
LERC	Sanders, W. A.	PENN STATE U-UNIV PK	NSG 3016	Bradt, R. C.	47	3266
LERC	Gelder, T. F.	PENN STATE U-UNIV PK	NSG 3031	Henderson, R. E.	41	3267
LERC	Sockol, P. M.	PENN STATE U-UNIV PK	NSG 3032	Lakshminarayana, B.	41	3268
LERC	Berkopec, F. D.	PENN STATE U-UNIV PK	NSG 3097	Robinson, J. W.	49	3269
LERC	Stevens, N. J.	PENN STATE U-UNIV PK	NSG 3166	Robinson, J. W.	13	3270
LERC	Sockol, P. M.	PENN STATE U-UNIV PK	NSG 3212	Lakshminarayana, B.	41	3271
LERC	Will, H. A.	POLY INST OF NY	NSG 3108	Lederman, S.	13	2953
LERC	Pelouch, J. J., Jr.	PRINCETON UNIVERSITY	NSG 3176	O'Neill, G. K.	42	2787
LERC	Cassidy, J. F.	PRINCETON UNIVERSITY	NSG 3178	Sirignan, W. A.	46	2788
LERC	Bishop, A. R.	PURDUE UNIVERSITY	NGR 15-005-191	Hoffman, J. D.	41	2108
LERC	Davidson, H. W.	PURDUE UNIVERSITY	NSG 3071	L'Ecuyer, M. R.	41	2111
LERC	Katsanis, T.	PURDUE UNIVERSITY	NSG 3105	Thompson, H. D.	41	2112
LERC	Lehtinen, B.	PURDUE UNIVERSITY	NSG 3119	Leonard, R. G.	41	2113
LERC	Serafini, J. S.	PURDUE UNIVERSITY	NSG 3135	Sullivan, J. P.	41	2114
LERC	Chamis, C. C.	PURDUE UNIVERSITY	NSG 3185	Sun, C. T.	41	2115
LERC	Lyons, V. J.	PURDUE UNIVERSITY	NSG 3213	Skifstadt, J. G.	41	2116
LERC	Jones, W. R., Jr.	RENSSELAER POLY-NY	NSG 3170	Laver, J. A.	13	2972
LERC	Lad, R. A.	RICE UNIVERSITY	NGL 44-006-001	Rorschach, H. E.	13	3411
LERC	Gaugler, R. E.	STANFORD UNIVERSITY	NAS 3-14336	Kays, W. M.	41	1287
LERC	Gaugler, R. E.	STANFORD UNIVERSITY	NSG 3124	Johnston, J. P.	46	1375
LERC	Weinberg, I.	STATE UNIV NY-ALBANY	NSG 3095	Corbett, J. W.	39	2981
LERC	Holdeman, J. D.	STATE UNIV NY-ALBANY	NSG 3138	Mohnen, V. A.	31	2982
LERC	Morris, J. F.	STATE UNIV NY-BUFFAL	NSG 7071	Shaw, D. T.	13	2992
LERC	Cochran, T. H.	STATE U NY-STONY BRK	NSG 3051	Berlad, A. L.	43	3004
LERC	Priem, R. J.	TENNESSEE TECH U	NGR 43-003-015	Ventrice, M. B.	46	3341
LERC	Priem, R. J.	TEXAS A&I UNIVERSITY	NSG 3112	O'Hara, J. C.	41	3428
LERC	Brown, G. V.	TEXAS A&M UNIVERSITY	NSG 3201	Ford, A. L.	13	3454
LERC	Marek, C. J.	TRENTON STATE COL	NSG 3180	Feng, C. C.	46	2802
LERC	Weigand, A. J.	TULANE UNIVERSITY	NSG 3209	Weinstein, A. M.	51	2238
LERC	Titran, R. H.	TUSKEGEE INSTITUTE	NSG 3154	Ramirez, R. P.	47	1037
LERC	Fordyce, J. S.	UNIV OF ALBUQUERQUE	NSG 3092	Urzendowski, R. M.	12	2822
LERC	Stephens, J. R.	UNIV CALIF-BERKELEY	NGR 05-003-562	Morris, J. W.	47	1428
LERC	Marek, C. J.	UNIV CALIF-BERKELEY	NSG 3028	Dailey, J. W.	46	1437
LERC	Marek, C. J.	UNIV CALIF-BERKELEY	NSG 3227	Oppenheim, A. K.	41	1438
LERC	Spera, D. A.	UNIV CALIF-L ANGELES	NSG 3082	Friedman, P. P.	46	1498
LERC	Friedman, R.	UNIV CALIF-L ANGELES	NSG 3116	English, J. M.	41	1499
LERC	Burkhart, J. A.	UNIV CALIF-L ANGELES	NSG 3153	Frederking, T. H.	46	1500

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LERC	Salzman, J. A.	UNIV CALIF-SAN DIEGO	NAS 3-21386	Austin, R. W.	19	1527
LERC	Salzman, J. A.	UNIV CALIF-SAN DIEGO	NAS 3-21473	Austin, R. W.	33	1528
LERC	Flood, D. J.	UNIV CALIF-SAN DIEGO	NSG 3034	Oesterreicher, H.	47	1560
LERC	Haggard, J. B.	UNIV CALIF-SAN DIEGO	NSG 3047	Williams, F. A.	43	1561
LERC	Woollam, J. A.	UNIV CALIF-SAN DIEGO	NSG 3055	Webb, G. W.	19	1562
LERC	Woollam, J. A.	UNIV CALIF-SAN DIEGO	NSG 3103	Luo, H. L.	13	1563
LERC	Purvis, C. K.	UNIV CALIF-SAN DIEGO	NSG 3150	Whipple, E. C., Jr.	39	1564
LERC	Marek, C. J.	UNIV CALIF-SAN DIEGO	NSG 3219	Libby, P. A.	41	1565
LERC	Rice, E. J.	UNIV OF CANTERBURY	NSG 7192	Eversman, W.	46	3863
LERC	Sundberg, G. R.	UNIV OF CINCINNATI	NSG 3022	Henderson, H. T.	45	3139
LERC	Riley, T. J.	UNIV OF CINCINNATI	NSG 3024	Nevin, J. H.	45	3140
LERC	Jones, R. E.	UNIV OF CINCINNATI	NSG 3045	Kauffman, C. W.	41	3141
LERC	Stepka, F. S.	UNIV OF CINCINNATI	NSG 3066	Tabakoff, W.	41	3142
LERC	Blue, J. W.	UNIV OF CINCINNATI	NSG 3091	Jha, S.	13	3143
LERC	Miner, R. V., Jr.	UNIV OF CINCINNATI	NSG 3147	Antolovich, S. D.	47	3144
LERC	Coy, J. J.	UNIV OF CINCINNATI	NSG 3188	Huston, R. L.	46	3145
LERC	Groeneweg, J. F.	UNIV COLORADO-BOLDR	NSG 3181	Uberoi, M. S.	41	1706
LERC	Hein, G. F.	UNIV OF DAYTON	NAS 3-19699	Engler, N. A.	73	3146
LERC	Stevenson, S. M.	UNIV OF DAYTON	NAS 3-20365	Martino, J. P.	39	3147
LERC	Entile, L. G.	UNIV OF DAYTON	NAS 3-20392	Engler, N. A.	42	3148
LERC	Stevenson, S. M.	UNIV OF DAYTON	NAS 3-21355	Martino, J. P.	47	3149
LERC	Gentile, L. C.	UNIV OF DAYTON	NAS 3-21370	Engler, N. A.	42	3150
LERC	Acurio, J.	UNIV OF DAYTON	NAS 3-21698	Militello, J.	41	3151
LERC	Namkoong, D.	UNIV OF DELAWARE	NSG 3184	Birchenall, C. E.	47	1773
LERC	Adamczyk, J. J.	UNIV OF DELAWARE	NSG 3189	Seidel, B. S.	41	1774
LERC	Sheibley, D. W.	UNIV OF FLORIDA	NGR 10-005-182	Walker, R. D., Jr.	43	1890
LERC	Godlewski, M. P.	UNIV OF FLORIDA	NSG 3018	Lindholm, F. A.	45	1896
LERC	Alston, W. B.	UNIV OF FLORIDA	NSG 3120	Butler, G. B.	12	1897
LERC	Gilbert, L. J.	UNIV OF HAWAII-MANOA	NSG 3132	Hwang, H. H.	45	1993
LERC	Bober, L. J.	UNIV ILLINOIS-URBANA	NGL 14-005-140	Chow, W. L.	41	2067
LERC	Dunning, J. W., Jr.	UNIV ILLINOIS-URBANA	NGR 14-005-200	Verdeyen, J. T.	13	2070
LERC	Cochran, T. H.	UNIV ILLINOIS-URBANA	NSG 3043	Strehlow, R. A.	43	2078
LERC	Scribbe, H. W.	UNIV ILLINOIS-URBANA	NSG 3098	Conry, T. F.	46	2079
LERC	Stockman, N. O.	UNIV OF IOWA	NSG 3117	Chou, D. C.	41	2161
LERC	Forestieri, A. F.	UNIV OF KANSAS	NSG 3087	Lenzen, K. H.	46	2191
LERC	Cochran, T. H.	UNIV OF KENTUCKY	NAS 3-20397	Lienhard, J. H.	13	2206
LERC	Brown, W. F., Jr.	UNIV OF KENTUCKY	NSG 3013	Conrad, H.	47	2212
LERC	Haggard, J. B.	UNIV OF KENTUCKY	NSG 3114	Altenkirch, R. A.	46	2213
LERC	Stephens, J. R.	UNIV OF KENTUCKY	NSG 3125	Conrad, H.	47	2214
LERC	Fleming, D. P.	UNIV OF LOUISVILLE	NSG 3200	Childs, D. W.	46	2220
LERC	Simoneau, R. J.	UNIV MARYLAND-COL PK	NGR 21-002-344	Sengers, J. V.	13	2312
LERC	Coles, W. D.	UNIV MARYLAND-COL PK	NGR 21-002-400	Spain, I. L.	13	2315
LERC	Shannon, J. L., Jr.	UNIV OF MIAMI	NGR 10-007-118	Craig, H. L., Jr.	47	1911
LERC	Cooper, L. P.	UNIV MICH-ANN ARBOR	NSG 3148	Nicholls, J. A.	41	2617
LERC	Beam, L. W.	UNIV MICH-ANN ARBOR	NSG 3161	Bolt, J. A.	46	2618
LERC	Ercegovic, D. E.	UNIV MICH-ANN ARBOR	NSG 3165	Kauffman, C. W.	41	2619
LERC	Lauver, R. W.	UNIV MICH-ANN ARBOR	NSG 3192	Yeh, G. S.	47	2620
LERC	Sovey, J. S.	U MINN-MNPLS-ST PAUL	NSG 3041	Wehner, G. K.	13	2657
LERC	Morris, J. F.	U MINN-MNPLS-ST PAUL	NSG 3094	Chanin, L. M.	19	2658
LERC	Wedeven, L. D.	UNIV MO-ROLLA	NSG 3113	Medrow, R. A.	46	2713
LERC	Weigand, A. J.	UNIV MO-ROLLA	NSG 3199	Yasuda, H. K.	19	2714
LERC	Cochran, T. H.	UNIV OF NOTRE DAME	NAS 3-20087	Kanury, A. M.	12	2120
LERC	Haggard, J. B.	UNIV OF NOTRE DAME	NAS 3-21018	Kanury, A. M.	11	2121
LERC	Feiler, C. E.	UNIV OF NOTRE DAME	NSG 3037	Atassi, H.	41	2123
LERC	Seldner, K.	UNIV OF NOTRE DAME	NSG 3048	Sain, M. K.	45	2124
LERC	Crouse, J. E.	UNIV OF NOTRE DAME	NSG 3133	Roberts, W. B.	41	2125
LERC	Burkhart, J. A.	UNIV OF NOTRE DAME	NSG 3182	Gabriel, G. J.	45	2126
LERC	Scott, J. N.	UNIV OF NOTRE DAME	NSG 3195	Atassi, H.	13	2127

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LERC	Fordyce, J. S.	UNIV OF PITTSBURGH	NSG 3002	Liu, C. C.	12	3299
LERC	McBrien, E. F.	UNIV OF PITTSBURGH	NSG 3163	Hamilton, H. B.	45	3300
LERC	Brown, G. V.	UNIV OF PITTSBURGH	NSG 3168	Wallace, W. E.	13	3301
LERC	Kohl, F. J.	UNIV OF PITTSBURGH	NSG 3214	Meier, G. H.	47	3302
LERC	Triner, J. E.	UNIV OF SO FLORIDA	NSG 3096	Garrett, S. J.	45	1920
LERC	Dittmar, J. H.	UNIV TENNESSEE-KNOXV	NGR 43-001-134	Lunsdaine, E.	41	3360
LERC	Graham, R. W.	UNIV TENNESSEE-KNOXV	NSG 3173	Reid, R. L.	46	3365
LERC	Sovie, R. J.	UNIV TENNESSEE-KNOXV	NSG 3224	Dicks, J. B.	49	3366
LERC	Moeckel, W. E.	UNIV TEXAS-AUSTIN	NSG 3089	Powers, E. J.	45	3529
LERC	Sheibley, D. W.	UNIV TEXAS-AUSTIN	NSG 3190	Lagow, R. J.	52	3530
LERC	Rice, E. J.	UNIV TEXAS-AUSTIN	NSG 3198	Blackstock, D. T.	13	3531
LERC	Brandhorst, H. W., Jr.	UNIV TEXAS-EL PASO	NSG 3146	Brient, S. J.	47	3570
LERC	Lehtinen, B.	UNIV OF TOLEDO	NSG 3084	Leininger, G. G.	45	3156
LERC	Connolley, D. J.	UNIV OF TOLEDO	NSG 3099	Rush, W. F.	13	3157
LERC	Labus, T. L.	UNIV OF TOLEDO	NSG 3121	DeWitt, K. J.	49	3158
LERC	Spera, D. A.	UNIV OF TOLEDO	NSG 3139	Koza, K. R.	41	3159
LERC	Cunningham, R. E.	UNIV OF TOLEDO	NSG 3156	Keith, T. G.	46	3160
LERC	Lehtinen, B.	UNIV OF TOLEDO	NSG 3171	Leininger, G. G.	45	3161
LERC	Cunningham, R. E.	UNIV OF VIRGINIA	NSG 3177	Gunter, E. J.	46	3702
LERC	Valentine, H. H.	UNIV OF WASHINGTON	NSG 3152	Martini, W. R.	46	3775
LERC	Valentine, H. H.	UNIV OF WASHINGTON	NSG 3194	Martini, W. R.	46	3776
LERC	DiCarlo, J. A.	UNIV OF WYOMING	NSG 3217	Adams, D. F.	47	3847
LERC	Maslowski, E. A.	VIRGINIA POLY INST	DEN 3 65	Demerdash, N. A.	45	3708
LERC	Shaw, R. J.	VIRGINIA POLY INST	NSG 3073	Jakubowski, A. K.	41	3751
LERC	Sovey, J. S.	VIRGINIA POLY INST	NSG 3204	Dwight, D. W.	47	3752
LERC	Phillips, B. R.	WEST VIRGINIA UNIV	NSG 3134	Wen, C. Y.	43	3793
LERC	Smith, J. M.	WICHITA STATE UNIV	NSG 3186	Greywall, M. S.	21	2203
LERC	Hsu, L. C.	WILBERFORCE UNIV	NSG 3067	Stickney, P. B.	12	3170
LERC	Godlewski, M. P.	WORCESTER POLY INST	NSG 3137	Lanyon, H. P.	45	2558
LERC	Fryburg, G. C.	YALE UNIVERSITY	NSG 3107	Rosner, D. E.	47	1762
LERC	Fryburg, G. C.	YALE UNIVERSITY	NSG 3169	Rosner, D. E.	12	1763
LERC	Godlewski, M. P.	YESHIVA UNIVERSITY	NSG 3123	Pollak, F.	45	3028
LERC	Morris, J. F.	OREGON GRADUATE CTR	NSG 3054	Swanson, L. S.	47	3189
MSFC	Williams, J. R.	ALABAMA A&M UNIV	NAS 8-32945	Lal, R. B.	47	1000
MSFC	Parnell, T. A.	ALABAMA A&M UNIV	NSG 8001	George, M. C.	11	1002
MSFC	Schafer, C. F.	ALABAMA A&M UNIV	NSG 8033	Lal, R. B.	13	1003
MSFC	Bilbro, J. W.	ALABAMA A&M UNIV	NSG 8037	Murty, S. S.	13	1004
MSFC	Humphries, W. R.	ALABAMA A&M UNIV	NSG 8041	Saha, H.	46	1005
MSFC	Allen, R. E.	ALABAMA A&M UNIV	NSG 8042	Savage, J.	51	1006
MSFC	Snyder, R. S.	ALABAMA A&M UNIV	NSG 8051	Gibson, W. L.	51	1007
MSFC	Gould, J. M.	ALABAMA A&M UNIV	NSG 8057	Shiva, S. G.	45	1008
MSFC	Downs, S. W., Jr.	ALABAMA A&M UNIV	NSG 8062	Montgomery, O. L.	39	1009
MSFC	Snyder, R. S.	ALABAMA A&M UNIV	NSG 8064	Savage, J.	51	1010
MSFC	Lee, G.	ARIZONA STATE UNIV	NAS 8-32230	Woodfin, M. A.	21	1078
MSFC	Camp, D. W.	ARIZONA STATE UNIV	NAS 8-32357	Logan, E., Jr.	31	1079
MSFC	Williams, J. R.	ARIZONA STATE UNIV	NAS 8-32937	Wagner, J. B.	47	1080
MSFC	Fountain, J. A.	ATHENS STATE COLLEGE	NAS 8-28058	McNutt, R. C.	13	1011
MSFC	Moore, W. W., Jr.	ATHENS STATE COLLEGE	NAS 8-30880	Martin, A. M., III	13	1012
MSFC	Zwiener, J. M.	ATHENS STATE COLLEGE	NAS 8-31731	Workman, G. L.	12	1013
MSFC	Finnell, S. E.	ATHENS STATE COLLEGE	NAS 8-32221	Workman, G. L.	13	1014
MSFC	Shriver, E. L.	ATHENS STATE COLLEGE	NAS 8-32483	McNutt, R. C.	43	1015
MSFC	Woodis, K. W.	ATHENS STATE COLLEGE	NAS 8-32834	Workman, G. L.	45	1016
MSFC	Zwiener, J. M.	ATHENS STATE COLLEGE	NAS 8-32920	Workman, G. L.	19	1017
MSFC	Kent, M. I.	ATLANTA UNIVERSITY	NSG 8019	Reed, J. L.	12	1923
MSFC	White, J. B.	AUBURN UNIV-AUBURN	NAS 8-26930	Carroll, B. D.	45	1018
MSFC	Cummings, R. E.	AUBURN UNIV-AUBURN	NAS 8-30654	Vachon, R. I.	22	1019
MSFC	Keer, J. H.	AUBURN UNIV-AUBURN	NAS 8-31223	Pinson, L. J.	45	1020
MSFC	Matheney, J. L.	AUBURN UNIV-AUBURN	NAS 8-31572	Carroll, B. D.	45	1021

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TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	GRANT/ CONTRACT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
MSFC	Huffman, J. D.	AUBURN UNIV-AUBURN	NAS 8-32215	Vachon, R. I.	39	1022
MSFC	Routh, D. E.	AUBURN UNIV-AUBURN	NAS 8-32633	Cook, K. B.	49	1023
MSFC	Routh, D. E.	AUBURN UNIV-AUBURN	NAS 8-32634	Kerns, D. V.	49	1024
MSFC	Routh, D. E.	AUBURN UNIV-AUBURN	NAS 8-33092	Kerns, D. V.	45	1025
MSFC	Shackelford, B. W., Jr.	AUBURN UNIV-AUBURN	NCA 8-125	Sforzini, R. H.	43	1026
MSFC	Nola, F. J.	AUBURN UNIV-AUBURN	NCA 8-128	Russell, D.	43	1027
MSFC	Shackelford, B. W., Jr.	AUBURN UNIV-AUBURN	NCA 8-130	Sforzini, R. H.	41	1028
MSFC	Daniel, C. C.	AUBURN UNIV-AUBURN	NSG 8047	Flood, C. A., Jr.	49	1030
MSFC	Hastings, L. J.	BALL STATE UNIVERSTY	NCA 8-121	Cosby, R.	49	2086
MSFC	Hastings, L. J.	BALL STATE UNIVERSTY	NCA 8-127	Cosby, R.	49	2087
MSFC	Hastings, L. J.	BALL STATE UNIVERSTY	NCA 8-129	Cosby, R.	49	2088
MSFC	O'Dell, C. R.	BELOIT COLLEGE	NAS 8-32901	Schroeder, D. J.	11	3794
MSFC	Guynes, B. V.	BOSTON UNIVERSITY	NAS 8-32844	Mendillo, M.	31	2361
MSFC	Talley, D.	CALIF INST OF TECH	NAS 8-27978	Stone, E. C.	11	1170
MSFC	Gross, L. A.	CALIF INST OF TECH	NAS 8-29313	Acosta, A. J.	46	1171
MSFC	Schafer, C. F.	CASE WESTERN RESERVE	NAS 8-31802	Ostrach, S.	46	3064
MSFC	Schafer, C. F.	CASE WESTERN RESERVE	NAS 8-31907	Ostrach, S.	12	3065
MSFC	Williams, J. R.	CASE WESTERN RESERVE	NAS 8-33015	Ostrach, S.	13	3066
MSFC	Williams, J. R.	CLARKSON COL OF TECH	NAS 8-32944	Subramanian, R. S.	13	2847
MSFC	Fichtl, G. H.	COLORADO STATE UNIV	NAS 8-31347	Winn, C. B.	49	1653
MSFC	Fichtl, G. H.	COLORADO STATE UNIV	NAS 8-31673	Edwards, H. W.	46	1654
MSFC	Fichtl, G. H.	COLORADO STATE UNIV	NAS 8-31688	Sandhorn, V. A.	44	1655
MSFC	Manning, H. S.	COLUMBIA UNIVERSITY	NAS 8-30753	Novick, R.	11	2858
MSFC	Seltzer, S. M.	COLUMBIA UNIVERSITY	NAS 8-32212	Likins, P. A.	19	2859
MSFC	Dailey, C. C.	COLUMBIA UNIVERSITY	NAS 8-33085	Novick, R.	11	2860
MSFC	Kroes, R. L.	FISK UNIVERSITY	NGR 43-021-002	Silberman, E.	13	3332
MSFC	Kent, M. I.	FISK UNIVERSITY	NSG 8035	Mickens, R. E.	12	3334
MSFC	Kroes, R. L.	FISK UNIVERSITY	NSG 8060	Silberman, E.	13	3335
MSFC	Bianca, C.	FLORIDA TECH UNIV	NAS 8-32835	Carroll, W. E.	47	1868
MSFC	Smith, O. E.	FLORIDA TECH UNIV	NAS 8-33071	Somerville, P. N.	31	1869
MSFC	Paludan, C. T.	GEORGIA INST OF TECH	NAS 8-30653	Dees, J. W.	39	1939
MSFC	Smith, O. E.	GEORGIA INST OF TECH	NAS 8-30657	Justus, C. G.	49	1940
MSFC	Kerr, J. H.	GEORGIA INST OF TECH	NAS 8-31193	Callen, W. R.	13	1941
MSFC	Downs, S. W., Jr.	GEORGIA INST OF TECH	NAS 8-31850	Dees, J. W.	39	1942
MSFC	Downs, S. W., Jr.	GEORGIA INST OF TECH	NAS 8-31990	Faust, C. E.	32	1943
MSFC	Downs, S. W., Jr.	GEORGIA INST OF TECH	NAS 8-32397	Shackelford, R. G.	39	1944
MSFC	Smith, O. E.	GEORGIA INST OF TECH	NAS 8-32897	Justus, C. G.	31	1945
MSFC	Reed, B.	GEORGIA INST OF TECH	NAS 8-33093	Pierce, A. D.	49	1946
MSFC	Snoddy, W. C.	HARVARD UNIVERSITY	NAS 5-3949	Noyes, R. W.	11	2369
MSFC	Snoddy, W. C.	HARVARD UNIVERSITY	NAS 8-31374	Vaiana, G. S.	13	2373
MSFC	Bordelon, C. S.	HARVARD UNIVERSITY	NAS 8-31549	Noyes, R. W.	13	2374
MSFC	Lacy, L. L.	HARVARD UNIVERSITY	NAS 8-32691	Turnbull, D.	13	2375
MSFC	Dailey, C. C.	INDIANA U-BLOOMINGTN	NAS 8-33087	Mufson, S. L.	11	2090
MSFC	Dailey, C. C.	IOWA STATE UNIV	NAS 8-33013	Lamb, R. C.	11	2128
MSFC	O'Dell, C. R.	JOHNS HOPKINS UNIV	NAS 8-32903	Fastie, W. G.	11	2256
MSFC	Kornfield, D. M.	LEHIGH UNIVERSITY	NAS 8-32406	VanDerHoff, J. W.	51	3225
MSFC	Reeves, F. A.	LEHIGH UNIVERSITY	NAS 8-32657	VanDerHoff, J. W.	59	3226
MSFC	Williams, J. R.	LEHIGH UNIVERSITY	NAS 8-32951	VanDerHoff, J. W.	13	3227
MSFC	Manning, H. S.	MASS INST OF TECH	NAS 8-27972	Bradt, H. V.	11	2429
MSFC	Manning, H. S.	MASS INST OF TECH	NAS 8-27975	Lewin, W. H.	11	2430
MSFC	Davidson, M. C.	MASS INST OF TECH	NAS 8-30537	Gatos, H. C.	47	2431
MSFC	Meyers, C. H.	MASS INST OF TECH	NAS 8-30752	Clark, G. W.	11	2432
MSFC	Chassay, R. P.	MASS INST OF TECH	NAS 8-31350	Uhlmann, D. R.	47	2433
MSFC	Reeves, F. A.	MASS INST OF TECH	NAS 8-31552	Uhlmann, D. R.	47	2434
MSFC	VonTiesenhausen, G. F.	MASS INST OF TECH	NAS 8-32925	Miller, R. H.	47	2435
MSFC	Davidson, M. C.	MASS INST OF TECH	NAS 8-32994	Hitt, A. F.	13	2436
MSFC	Hollis, B. R., Jr.	MISSISSIPPI STATE U	NAS 8-26749	Trotter, D.	13	2677
MSFC	Wallace, G. R.	MISSISSIPPI STATE U	NAS 8-31373	Ingels, F. M.	45	2678

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MSFC	Clever, W. W.	MISSISSIPPI STATE U	NAS 8-31770	Shepard, W. S.	41	2679
MSFC	Hendrix, N. D.	MISSISSIPPI STATE U	NAS 8-32810	Mitchell, J. R.	22	2680
MSFC	Sims, J. L.	MISSISSIPPI STATE U	NAS 8-32912	Thompson, J. F.	49	2681
MSFC	Broussard, P. H.	MISSISSIPPI STATE U	NCA 8-131	Jones, E. W.	46	2682
MSFC	Eby, P. B.	MONTANA STATE UNIV	NSG 8061	Nortdvedt, K.	13	2732
MSFC	Stephens, J. B.	MOREHOUSE COLLEGE	NGL 11-008-001	Gales, J. N.	12	1967
MSFC	Stone, N. H.	MOREHOUSE COLLEGE	NSG 8020	Turner, J. M.	13	1970
MSFC	Clemons, J. M.	MOREHOUSE COLLEGE	NSG 8030	Frazier, D. O.	12	1971
MSFC	Vaughn, W. W.	MOREHOUSE COLLEGE	NSG 8039	Spight, C.	13	1972
MSFC	Burch, J. L.	MOREHOUSE COLLEGE	NSG 8043	Turner, J. M.	13	1973
MSFC	Clemons, J. M.	MOREHOUSE COLLEGE	NSG 8049	Hall, J. H., Jr.	12	1974
MSFC	Patterson, W. J.	MORRIS BROWN COLLEGE	NSG 8027	Maxwell, A.	12	1975
MSFC	Reeves, F. A.	NEW YORK UNIVERSITY	NAS 8-33099	Johnson, A. J.	51	2927
MSFC	Stuckey, J. M.	NO CAR A&T STATE U	NSG 8045	Sharma, A. V.	46	3041
MSFC	Downs, S. W., Jr.	NORTH GEORGIA COL	NAS 8-30619	Biesbrock, J. A.	51	1976
MSFC	Dailey, C. C.	NORTHWESTERN UNIV	NAS 8-33010	Ulmer, M. P.	11	2014
MSFC	Hill, K.	OREGON STATE UNIV	NAS 8-32694	Barber, D. A.	31	3192
MSFC	Fichtl, G. H.	PENN STATE U-UNIV PK	NAS 8-32046	Blackadar, A. K.	31	3248
MSFC	Reeves, F. A.	PRINCETON UNIVERSITY	NAS 8-32614	Saville, D. A.	51	2773
MSFC	McPherson, W. B.	PRINCETON UNIVERSITY	NAS 8-33102	Caveny, L. H.	49	2774
MSFC	Davidson, M. C.	RENSSELAER POLY-NY	NAS 8-26146	Wiedmann, H.	47	2958
MSFC	Reeves, F. A.	RENSSELAER POLY-NY	NAS 8-32425	Glicksman, M. E.	47	2959
MSFC	Davidson, M. C.	RENSSELAER POLY-NY	NAS 8-32639	Wiedemeier, H.	19	2960
MSFC	Lacy, L. L.	RENSSELAER POLY-NY	NAS 8-32690	Glicksman, M. E.	12	2961
MSFC	Williams, J. R.	RENSSELAER POLY-NY	NAS 8-32936	Wiedemeier, H.	47	2962
MSFC	Lacy, L. L.	RENSSELAER POLY-NY	NAS 8-33074	Lacy, L. L.	13	2963
MSFC	Guttman, C. H.	RICE UNIVERSITY	NAS 8-33023	Few, A. A.	49	3405
MSFC	Hill, C. K.	ST LOUIS UNIVERSITY	NAS 8-32838	Fuelberg, H. E.	31	2697
MSFC	Jayroe, R. R., Jr.	SAVANNAH STATE COL	NSG 8048	Wenner, D. B.	45	1978
MSFC	Urban, E. W.	SO CAROLINA ST COL	NSG 8044	Payne, J. E.	13	3320
MSFC	Williamson, J. G.	SO UNIV-BATON ROUGE	NSG 8025	Tabony, J.	46	2231
MSFC	Trenkle, J. J.	SO UNIV-BATON ROUGE	NSG 8029	Fernald, F. G.	46	2232
MSFC	White, J. B.	SO UNIV-BATON ROUGE	NSG 8053	Montgomery, V. T.	45	2233
MSFC	Owen, R. B.	SO UNIV-BATON ROUGE	NSG 8056	Scott, R. L., Jr.	46	2234
MSFC	Bass, B. G.	STANFORD UNIVERSITY	NAS 8-31571	Walker, A. B., Jr.	13	1296
MSFC	Snoddy, W. C.	STANFORD UNIVERSITY	NAS 8-32263	Underwood, J. H.	11	1297
MSFC	Potter, R.	STANFORD UNIVERSITY	NAS 8-32355	Everitt, C. W.	13	1298
MSFC	Urban, E. W.	STANFORD UNIVERSITY	NAS 8-32605	Everitt, C. W.	13	1299
MSFC	Guynes, B. V.	STANFORD UNIVERSITY	NAS 8-32852	Darosa, A. V.	31	1300
MSFC	Dailey, C. C.	STANFORD UNIVERSITY	NAS 8-33012	Walker, A. B., Jr.	11	1301
MSFC	Clifton, K. S.	STATE UNIV NY-ALBANY	NAS 8-32485	Schuerman, D. W.	31	2977
MSFC	Vaughn, O. H., Jr.	STATE UNIV NY-ALBANY	NAS 8-32893	Vonnegut, B.	39	2978
MSFC	Williams, J. R.	STATE UNIV NY-ALBANY	NAS 8-32947	VanOss, C. J.	51	2979
MSFC	Gary, G. A.	STATE UNIV NY-ALBANY	NSG 8040	Weinberg, J. L.	11	2988
MSFC	Nerren, B. H.	STATE UNIV NY-BUFFAL	NAS 8-31953	Grusha, E.	12	2990
MSFC	O'Dell, C. R.	STATE U NY-STONY BRK	NAS 8-32904	Caldwell, J. J.	11	2994
MSFC	Dalins, I.	TALLADEGA COLLEGE	NGR 01-007-009	Breecher, J.	13	1031
MSFC	Kent, M. I.	TENNESSEE STATE UNIV	NSG 8032	Burns, R. G.	46	3339
MSFC	Humphries, W. R.	TENNESSEE TECH U	NAS 8-31564	Griggs, E. I.	31	3340
MSFC	Nowakowski, M. F.	TEXAS A&M UNIVERSITY	NAS 8-26379	Porter, W. A.	45	3434
MSFC	Hill, C. K.	TEXAS A&M UNIVERSITY	NAS 8-31773	Scoggins, J. R.	31	3435
MSFC	Nowakowski, M. F.	TEXAS A&M UNIVERSITY	NAS 8-32527	Parker, D. L.	13	3436
MSFC	Young, L. E.	TUSKEGEE INSTITUTE	NSG 8038	Doreswamy, C. V.	45	1038
MSFC	Brantley, L. W.	TUSKEGEE INSTITUTE	NSG 8054	Sellers, J. P., Jr.	46	1039
MSFC	Rhodes, P. H.	UNIV ALA-BIRMINGHAM	NAS 8-32923	Sachs, G.	51	1040
MSFC	Snyder, R. S.	UNIV ALA-BIRMINGHAM	NAS 8-33014	Chiovetti, R., Jr.	51	1041
MSFC	Parnell, T. A.	UNIV ALA-HUNTSVILLE	NAS 8-24908	Hiser, H. W.	11	1043
MSFC	Parnell, T. A.	UNIV ALA-HUNTSVILLE	NAS 8-24953	Gregory, J. C.	13	1044

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MSFC	Tandberghanssen, E.	UNIV ALA-HUNTSVILLE	NAS 8-28097	Wu, S. T.	13	1045
MSFC	Decher, R.	UNIV ALA-HUNTSVILLE	NAS 8-29316	Hendricks, J. B.	99	1046
MSFC	Chappell, C. R.	UNIV ALA-HUNTSVILLE	NAS 8-30563	Comfort, R. H.	13	1047
MSFC	Parnell, T. A.	UNIV ALA-HUNTSVILLE	NAS 8-31170	Gregory, J. C.	13	1048
MSFC	West, G. S., Jr.	UNIV ALA-HUNTSVILLE	NAS 8-31171	Hung, R. J.	39	1049
MSFC	Crider, B.	UNIV ALA-HUNTSVILLE	NAS 8-31293	Christiensen, D.	13	1050
MSFC	Smith, R. E.	UNIV ALA-HUNTSVILLE	NAS 8-31321	Hung, R. J.	31	1051
MSFC	Bensko, J.	UNIV ALA-HUNTSVILLE	NAS 8-31345	Doyle, L.	32	1052
MSFC	Vaughn, O. H., Jr.	UNIV ALA-HUNTSVILLE	NAS 8-31729	Hung, R. J.	13	1053
MSFC	Parnell, T. A.	UNIV ALA-HUNTSVILLE	NAS 8-31895	Gregory, J. C.	13	1054
MSFC	Clifton, K. S.	UNIV ALA-HUNTSVILLE	NAS 8-32225	Stuhlinger, E.	11	1055
MSFC	Whitaker, A. F.	UNIV ALA-HUNTSVILLE	NAS 8-32398	Castle, J. G.	13	1056
MSFC	Carey, W. T., Jr.	UNIV ALA-HUNTSVILLE	NAS 8-32608	Carter, E. A.	45	1057
MSFC	Urban, E. W.	UNIV ALA-HUNTSVILLE	NAS 8-32818	Karr, G. R.	13	1058
MSFC	Jones, R. E.	UNIV ALA-HUNTSVILLE	NAS 8-33096	Shiva, S. G.	22	1059
MSFC	Morgan, S. H.	UNIV ALA-HUNTSVILLE	NAS 8-33132	Wu, S. T.	19	1060
MSFC	Morton, R. R.	UNIV ALA-UNIVERSITY	NAS 8-29100	April, G. C.	49	1063
MSFC	Bensko, J.	UNIV ALA-UNIVERSITY	NAS 8-29937	Stow, S. H.	32	1064
MSFC	Owen, R. B.	UNIV ALA-UNIVERSITY	NAS 8-32386	Lin, H. K.	13	1065
MSFC	Linton, R. C.	UNIV ALA-UNIVERSITY	NAS 8-32481	Desmedt, D.	12	1066
MSFC	Allen, R. E.	UNIV OF ARIZONA	NAS 8-29566	Bier, M.	13	1099
MSFC	Parnell, T. A.	UNIV OF ARIZONA	NAS 8-31192	Sonett, C. P.	11	1100
MSFC	Miller, E. R.	UNIV OF ARIZONA	NAS 8-31196	Sonett, C. P.	11	1101
MSFC	Snyder, R. S.	UNIV OF ARIZONA	NAS 8-31948	Bartels, P. H.	51	1102
MSFC	Griner, D. B.	UNIV OF ARIZONA	NAS 8-32127	Slater, P. N.	11	1103
MSFC	Williams, J. R.	UNIV OF ARIZONA	NAS 8-32950	Bier, M.	51	1104
MSFC	Falls, L. W.	UNIV ARKANSAS-FAYETV	NAS 8-31550	Tubbs, J. D.	31	1156
MSFC	Ondrak, B. T.	UNIV CALIF-BERKELEY	NAS 8-29603	Price, P. B.	13	1397
MSFC	Roberts, W. T.	UNIV CALIF-BERKELEY	NAS 8-31346	Mozer, F. S.	19	1398
MSFC	Marmann, R.	UNIV CALIF-BERKELEY	NAS 8-32577	Bowyer, S.	11	1399
MSFC	Dailey, C. C.	UNIV CALIF-BERKELEY	NAS 8-33011	Anderson, K. A.	11	1400
MSFC	Page, M. A.	UNIV CALIF-L ANGELES	NAS 8-32571	Coleman, P. J., Jr.	32	1474
MSFC	Williams, J. R.	UNIV CALIF-L ANGELES	NAS 8-33115	Bunshah, R. F.	47	1475
MSFC	Neuschaefer, R.	UNIV CALIF-SAN DIEGO	NAS 8-27974	Peterson, L. E.	11	1536
MSFC	Chappell, C. R.	UNIV CALIF-SAN DIEGO	NAS 8-31145	McIlwain, C. E.	13	1537
MSFC	Guynes, B. V.	UNIV OF CHICAGO	NAS 8-32828	Meyer, P.	31	2032
MSFC	Jones, C. T.	UNIV COLORADO-BOLDR	NAS 8-31958	Hart, J. E.	39	1690
MSFC	Bass, B. G.	UNIV COLORADO-BOLDR	NAS 8-32364	Dulk, G. A.	11	1691
MSFC	Dailey, C. C.	UNIV COLORADO-BOLDR	NAS 8-33084	Linsky, J. L.	11	1692
MSFC	Camp, D. W.	UNIV OF DAYTON	NAS 8-31294	Luers, J. K.	41	3153
MSFC	Camp, D. W.	UNIV OF DAYTON	NAS 8-32111	Luers, J. K.	41	3154
MSFC	Schell, J. T.	UNIV OF FLORIDA	NAS 8-20247	Patterson, E. P.	12	1877
MSFC	Clark, J. H.	UNIV HOUSTON-CL LAKE	DEN 8 1	Samfield, E.	31	3491
MSFC	Costes, N.	UNIV ILLINOIS-CHICGO	NAS 8-32993	Silver, M. L.	44	2059
MSFC	Guynes, B. V.	UNIV OF IOWA	NAS 8-32807	Shawhan, S. D.	31	2155
MSFC	Rayroe, R. G.	UNIV OF KANSAS	NSG 8046	Lien, Y. E.	32	2199
MSFC	Pitzenberger, F. D.	UNIV OF LOUISVILLE	NAS 8-31233	Childs, D. W.	42	2216
MSFC	Scott, F. E.	UNIV MARYLAND-COL PK	NAS 8-32148	Colwell, R. R.	51	2290
MSFC	Fowlis, W. W.	UNIV OF MIAMI	NAS 8-32898	Geisler, J. E.	31	1903
MSFC	Ruff, R. C.	UNIV MICH-ANN ARBOR	NAS 8-31987	Carignan, G. R.	19	2589
MSFC	Chappell, C. R.	UNIV MICH-ANN ARBOR	NAS 8-32332	Carignan, G. R.	19	2590
MSFC	Jones, C.	UNIV MICH-ANN ARBOR	NAS 8-32569	Torr, M. R.	19	2591
MSFC	Ruff, R. C.	UNIV MICH-ANN ARBOR	NAS 8-32661	Carignan, G. R.	39	2592
MSFC	Talley, D.	U MINN-MNPLS-ST PAUL	NAS 8-27977	Waddington, C. J.	11	2645
MSFC	Paludan, C. T.	UNIV MISS-UNIVERSITY	NAS 8-32218	Walsh, D. E.	32	2692
MSFC	Smith, R. E.	UNIV MO-COLUMBIA	NAS 8-31150	Plummer, P. L.	31	2699
MSFC	Paludan, C. T.	UNIV MO-COLUMBIA	NAS 8-31767	Hadlock, F. O.	39	2700
MSFC	Smith, R. E.	UNIV MO-COLUMBIA	NAS 8-31849	Kassner, J. L., Jr.	31	2701

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TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	GRANT/ CONTRACT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
MSFC	Fallon, R. A.	UNIV MO-ROLLA	NAS 8-32976	Hagen, D. E.	31	2707
MSFC	Geller, G.	UNIV MO-ROLLA	NSG 8055	Summers, D. A.	47	2715
MSFC	Johnston, J. D.	UNIV NEBRASKA-LINCLN	NAS 8-31897	Kersten, L.	46	2735
MSFC	Smith, R. E.	UNIV NEVADA-DRI	NAS 8-31470	Squires, P.	31	2741
MSFC	Schrick, B. J.	UNIV NEVADA-DRI	NAS 8-31776	Kocmond, W. C.	31	2742
MSFC	Fallon, R. A.	UNIV NEVADA-DRI	NAS 8-32975	Kocmond, W. C.	31	2743
MSFC	Fallon, R. A.	UNIV NEVADA-DRI	NAS 8-32977	Hallett, J.	31	2744
MSFC	Smith, R. E.	UNIV OF NEVADA-RENO	NAS 8-31441	Telford, J. W.	19	2746
MSFC	Schrick, B. J.	UNIV OF NEVADA-RENO	NAS 8-32313	Kocmond, W. C.	31	2747
MSFC	Turner, R. E.	UNIV OKLAHOMA-NORMAN	NAS 8-31333	Inman, R. L.	31	3183
MSFC	Camp, D. W.	UNIV OKLAHOMA-NORMAN	NAS 8-31377	McCarthy, J.	31	3184
MSFC	Scott, F. E.	UNIV ORGEON-HLTH CTR	NAS 8-32162	Knox, R. J.	59	3205
MSFC	Reeves, F. A.	UNIV ORGEON-HLTH CTR	NAS 8-32353	Brooks, D. E.	51	3206
MSFC	Reeves, F. A.	UNIV ORGEON-HLTH CTR	NAS 8-32609	Seaman, G. V.	51	3207
MSFC	Nerrin, B. N.	UNIV ORGEON-HLTH CTR	NAS 8-32817	Brooks, D. E.	51	3208
MSFC	Dailey, C. C.	UNIV OF PENNSYLVANIA	NAS 8-33088	Shen, B. S.	11	3284
MSFC	Parnell, T. A.	UNIV SAN FRANCISCO	NAS 8-26758	Benton, E. V.	13	1604
MSFC	Lowrey, D. O.	UNIV SO CAROLINA-COL	NAS 8-28660	Fellers, R. G.	45	3321
MSFC	Caruso, S. V.	UNIV OF SO FLORIDA	NAS 8-31172	Sergent, J.	45	1916
MSFC	Huggins, C. T.	UNIV TENNESSEE-KNOXV	NAS 8-29271	Gonzalez, R. C.	45	3345
MSFC	Sloan, J.	UNIV TENNESSEE-KNOXV	NAS 8-29584	Frost, W.	46	3346
MSFC	Hill, K.	UNIV TENNESSEE-KNOXV	NAS 8-31718	Frost, W.	31	3347
MSFC	Paludan, C. T.	UNIV TENNESSEE-KNOXV	NAS 8-31980	Shahroki, F.	39	3348
MSFC	Vaughan, O. H.	UNIV TENNESSEE-KNOXV	NAS 8-32031	Connell, J. R.	31	3349
MSFC	Fichtl, G. H.	UNIV TENNESSEE-KNOXV	NAS 8-32118	Frost, W.	31	3350
MSFC	Schafer, C. F.	UNIV TENNESSEE-KNOXV	NAS 8-32484	Collins, F.	47	3351
MSFC	Anderson, B. J.	UNIV TENNESSEE-KNOXV	NAS 8-32611	Carter, J. M.	39	3352
MSFC	Camp, D. W.	UNIV TENNESSEE-KNOXV	NAS 8-32635	Kohl, R. H.	31	3353
MSFC	Camp, D. W.	UNIV TENNESSEE-KNOXV	NAS 8-32692	Frost, W.	31	3354
MSFC	Guttman, C. H.	UNIV TENNESSEE-KNOXV	NAS 8-33065	Hung, J. C.	46	3355
MSFC	Mercier, D. R.	UNIV TENNESSEE-KNOXV	NAS 8-33225	Smith, V. K., III	41	3356
MSFC	Snoddy, W. C.	UNIV TEXAS-AUSTIN	NAS 8-31459	Henize, K. G.	11	3500
MSFC	O'Dell, C. R.	UNIV TEXAS-AUSTIN	NAS 8-32905	Lambert, D. L.	11	3501
MSFC	O'Dell, C. R.	UNIV TEXAS-AUSTIN	NAS 8-32906	Jefferys, W. H.	11	3502
MSFC	Chappell, C. R.	UNIV TEXAS-DALLAS	NAS 8-31775	Hanson, W. B.	19	3555
MSFC	Oran, W. A.	UNIV TEXAS-DALLAS	NAS 8-32689	Hoffman, J. H.	31	3556
MSFC	Chappell, C. R.	UNIV TEXAS-DALLAS	NAS 8-32831	Hanson, W. B.	13	3557
MSFC	Chappell, C. R.	UNIV TEXAS-S ANTONIO	NAS 8-32584	Burch, J. L.	31	3578
MSFC	Patterson, W. J.	UNIV OF UTAH	NAS 8-30253	Andrade, J. D.	12	3586
MSFC	Goetz, O. K.	UNIV OF VIRGINIA	NAS 8-31951	Gunter, E. J.	46	3688
MSFC	Fallon, R. A.	UNIV OF WASHINGTON	NAS 8-33148	Hobbs, P. V.	31	3760
MSFC	Schrick, B. J.	UNIV OF WYOMING	NAS 8-32067	Vali, G.	31	3843
MSFC	Reeves, F. A.	UNIV OF WYOMING	NAS 8-32486	Saunders, C.	47	3844
MSFC	Fallon, R. A.	UNIV OF WYOMING	NAS 8-33150	Vali, G.	31	3845
MSFC	Chappell, C. R.	UTAH STATE UNIV	NAS 8-32636	Raitt, W. J.	31	3595
MSFC	Nichols, R. L.	VANDERBILT UNIVERSTY	NAS 8-30656	Kinser, D. L.	13	3370
MSFC	Caruso, S. V.	VANDERBILT UNIVERSTY	NAS 8-30883	Kinser, D. L.	47	3371
MSFC	Caruso, S. V.	VANDERBILT UNIVERSTY	NAS 8-32437	Kinser, D. L.	49	3372
MSFC	Nichols, R. L.	VANDERBILT UNIVERSTY	NAS 8-32695	Kinser, D. L.	47	3373
MSFC	Clotfelter, W. N.	VANDERBILT UNIVERSTY	NAS 8-32894	Wert, J. J.	47	3374
MSFC	Talley, D.	WASHINGTON UNIVERSTY	NAS 8-27976	Israel, M. H.	11	2718
MSFC	Daniels, J. L., Jr.	WASHINGTON UNIVERSTY	NAS 8-32354	Eastwood, L.	39	2719
MSFC	Espy, P. N.	XAVIER UNIV-LA	NSG 8050	Ioup, J.	39	2242
NSTL	Wolverton, B. C.	ALCORN STATE UNIV	NSG 8036	Latif, A.	51	2673
NSTL	Pearson, R.	GEORGIA INST OF TECH	NAS13-84	Faust, N. L.	22	1949
NSTL	Wolverton, B. C.	JACKSON STATE UNIV	NSG 8026	Shore, F.	39	2675
NSTL	Joyce, A. T.	JACKSON STATE UNIV	NSG 9016	Nelson, F. R.	39	2676
NSTL	Rusoff, L. L.	LA ST U&A&M COL-BRGE	NAS13-38	Wolverton, V. C.	59	2223

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NSTL	Wolverton, B. C.	UNIV SO MISSISSIPPI	NAS13-54	Stocks, P. K.	51	2693
NSTL	Wolverton, B. C.	UNIV SO MISSISSIPPI	NAS13-81	Stocks, P. K.	39	2694
NSTL	Hopkins, W. L.	UNIV SO MISSISSIPPI	NAS13-95	Brundage, W. G.	49	2695
WFC	Rossi, L. C.	CITY COLLEGE OF N Y	NAS 6-2439	Pierson, W. J.	32	2838
WFC	Stanley, H. R.	COLUMBIA UNIVERSITY	NAS 6-2455	Kuo, J. T.	33	2856
WFC	Stanley, H. R.	COLUMBIA UNIVERSITY	NAS 6-2519	Talwani, M.	32	2857
WFC	Gray, J. W.	CORNELL UNIVERSITY	NSG 6020	Kelley, M. C.	19	2916
WFC	Holland, A. C.	DREXEL UNIVERSITY	NSG 6007	Hackney, R. L.	31	3222
WFC	Holland, A. C.	DREXEL UNIVERSITY	NSG 6019	Acquista, C. R.	13	3223
WFC	Milliner, J. B.	ESTRN SHORE CMTY COL	NAS 6-2707	Unavailable	99	3617
WFC	Hoge, F. E.	HAMPTON INSTITUTE	NGR 47-020-006	Trehan, A. K.	19	3623
WFC	Stanley, H. R.	JOHNS HOPKINS UNIV	NAS 6-2706	Phillips, O. M.	33	2254
WFC	Huang, N. E.	JOHNS HOPKINS UNIV	NAS 6-2888	Phillips, O. M.	33	2255
WFC	West, W. W.	NEW MEX ST U-LAS CR	NAS 6-2686	Gammill, B. G.	46	2812
WFC	Walsh, E. J.	NEW MEX ST U-LAS CR	NAS 6-2795	Guard, K.	32	2813
WFC	Krabill, W. B.	NEW MEX ST U-LAS CR	NAS 6-2885	Guard, K.	32	2814
WFC	Stanley, H. R.	NO CAROLINA STATE U	NAS 6-2617	Long, S. R.	33	3043
WFC	Stanley, H. R.	OHIO STATE UNIV	NAS 6-2484	Rapp, R. H.	32	3109
WFC	Carr, R. E.	OKLAHOMA STATE UNIV	NSG 6018	Roth, L. O.	49	3177
WFC	Duke, J. R.	PENN STATE U-UNIV PK	NAS 6-2602	Hale, L. C.	19	3244
WFC	Duke, J. R.	PENN STATE U-UNIV PK	NAS 6-2726	Olivero, J.	31	3245
WFC	Schmidlin, F. J.	PENN STATE U-UNIV PK	NAS 6-2818	Clark, J. H.	31	3246
WFC	Schmidlin, F. J.	PENN STATE U-UNIV PK	NAS 6-2826	Hale, L. C.	31	3247
WFC	Ballance, C. W., Jr.	PENN STATE U-UNIV PK	NGL 39-009-032	Kendall, B. R.	13	3255
WFC	Gray, J. W.	PENN STATE U-UNIV PK	NSG 6004	Ferguson, G. A.	19	3276
WFC	Maurer, H. E.	PURDUE UNIVERSITY	NAS 6-2695	Phillips, T. L.	39	2099
WFC	Maurer, H. E.	PURDUE UNIVERSITY	NAS 6-2816	Anuta, P. E.	99	2100
WFC	Ballance, C. W., Jr.	RICE UNIVERSITY	NAS 6-1667	Anderson, H. R., Jr.	11	3404
WFC	Huang, N. E.	TEXAS A&M UNIVERSITY	NAS 6-2884	Ichiye, T.	33	3433
WFC	Gray, J. W.	UNIV ALASKA-FAIRBNKS	NSG 6014	Davis, T. N.	19	1073
WFC	Stanley, H. R.	UNIV CALIF-L ANGELES	NAS 6-2463	Kaula, W. M.	33	1473
WFC	Stanley, H. R.	UNIV CALIF-SAN DIEGO	NAS 6-2506	Hendershott, M.	11	1535
WFC	Duke, J. R.	UNIV OF DAYTON	NAS 6-2456	Luers, J. K.	31	3152
WFC	Huang, N. E.	UNIV OF DELAWARE	NAS 6-2820	Wu, J.	33	1766
WFC	Parker, L. C.	UNIV OF DELAWARE	NSG 6015	Robinson, D. M.	45	1776
WFC	Gray, J. W.	UNIV HOUSTON-HOUSTON	NSG 6008	Sheldon, W. R.	19	3485
WFC	Gray, J. W.	UNIV ILLINOIS-URBANA	NGR 14-005-181	Bowhill, S. A.	19	2069
WFC	Alfonsi, P. J.	UNIV MARYLAND-COL PK	NSG 6010	Harmon, D. M.	72	2339
WFC	Floyd, J. C.	UNIV MD-EASTRN SHORE	NAS 6-2855	Smith, J. C.	99	2351
WFC	Trafford, G. H.	UNIV MD-EASTRN SHORE	NGR 21-119-003	Singh, G.	13	2352
WFC	Oberholtzer, J. D.	UNIV MD-EASTRN SHORE	NSG 6006	Wutoh, J. G.	99	2353
WFC	Parsons, C. L.	UNIV MD-EASTRN SHORE	NSG 6016	Smith, J. C.	31	2354
WFC	Trafford, G. H.	UNIV MD-EASTRN SHORE	NSG 6017	Lynk, W. L.	59	2355
WFC	Rossi, L. C.	UNIV MICH-ANN ARBOR	NAS 6-2794	Horvath, J. J.	31	2588
WFC	Ballance, C. W., Jr.	U MINN-MNPLS-ST PAUL	NSG 6005	Arnoldy, R. J.	19	2661
WFC	Gray, J. W.	U MINN-MNPLS-ST PAUL	NSG 6009	Nier, A. O.	19	2662
WFC	Gray, J. W.	U MINN-MNPLS-ST PAUL	NSG 6021	Cahill, L. J., Jr.	19	2663
WFC	Ballance, C. W., Jr.	UNIV NEW HAMP-DURHAM	NSG 6013	Arnoldy, R. L.	31	2759
WFC	Gray, J. W.	UNIV NEW HAMP-DURHAM	NSG 6022	Arnoldy, R. L.	19	2760
WFC	Gray, J. W.	UNIV OF PITTSBURGH	NSG 6011	Zipf, E. C., Jr.	19	3304
WFC	Stanley, H. R.	UNIV TEXAS-AUSTIN	NAS 6-2454	Tapley, B. D.	32	3499
WFC	Ballance, C. W., Jr.	UNIV TEXAS-DALLAS	NSG 6012	Christensen, A. B.	19	3566
WFC	Gray, J. W.	UNIV TEXAS-DALLAS	NSG 6023	Christensen, A. B.	19	3567
WFC	Duke, J. R.	UNIV OF UTAH	NAS 6-2498	Kao, S. K.	31	3584
WFC	Duke, J. R.	UNIV OF UTAH	NAS 6-2627	Staffanson, F. L.	31	3585
WFC	Scott, J. H.	VIRGINIA POLY INST	NAS 6-2388	Powell, N. L.	39	3713
WFC	Carr, R. E.	VIRGINIA POLY INST	NGL 47-004-067	Tieleman, H. W.	31	3716
HQ-AD	Wright, M. D.	GEORGE WASHINGTON U	NSG 7145	Logsdon, J. M.	75	1815

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HQ-BX	Weir, J. F.	UNIV OF HAWAII-MANOA	NASW 2801	Jefferies, J. T.	11	1984
HQ-EE	Ernst, H. M.	CITY COLLEGE OF N Y	NSG 7144	Schilling, D. L.	49	2846
HQ-ET	Vitale, J. A.	OREGON STATE UNIV	NGL 38-002-053	Schrumpf, B. J.	39	3197
HQ-ET	Vitale, J. A.	UNIV CALIF-BERKELEY	NGL 05-003-404	Colwell, R. N.	39	1414
HQ-ET	Vitale, J. A.	UNIV CALIF-BERKELEY	NSG 7220	Colwell, R. N.	39	1448
HQ-EP	Prinkler, B.	UNIV CALIF-S BARBARA	NASW 3118	Unavailable	32	1589
HQ-ER	Flinn, E. A.	MASS INST OF TECH	NSG 7329	Soloman, S. C.	32	2535
HQ-ER	Flinn, E. A.	MASS INST OF TECH	NSG 7428	Counselman, C. C., III	32	2540
HQ-ER	Murphy, J. P.	OHIO STATE UNIV	NASW 3194	Mueller, I. I.	31	3111
HQ-ER	Murphy, J. P.	OHIO STATE UNIV	NGR 36-008-204	Mueller, I. I.	32	3115
HQ-ER	Murphy, J. P.	UNIV COLORADO-BOLDR	NASW 3103	Wyss, M.	32	1693
HQ-ER	Flinn, E. A.	UNIV TEXAS-AUSTIN	NSG 7159	Dorman, J. H.	19	3537
HQ-ER	Flinn, E. A.	UNIV TEXAS-AUSTIN	NSG 7162	Shelus, P. J.	19	3538
HQ-ER	Murphy, J. P.	UNIV CALIF-L ANGELES	NSG 7002	Kaula, W. M.	32	1511
HQ-ET	Vitale, J. A.	CORNELL UNIVERSITY	NGL 33-010-171	Liang, T.	39	2897
HQ-ET	Vitale, J. A.	LA ST U&A&M COL-BRGE	NGL 19-001-105	Whitehurst, C. A.	39	2224
HQ-ET	Vitale, J. A.	MASS INST OF TECH	NSG 7331	Gatos, H. C.	31	2536
HQ-ET	Vitale, J. A.	MICHIGAN STATE UNIV	NGL 23-004-083	Boylan, M. G.	39	2561
HQ-ET	Vitale, J. A.	MISSISSIPPI STATE U	NGL 25-001-054	Miller, W. F.	39	2683
HQ-ET	Gray, E. Z.	NEW YORK UNIVERSITY	NSG 7169	Morgenstern, O.	72	2941
HQ-ET	Vitale, J. A.	OLD DOMINION UNIV	NGL 47-003-067	Kindle, E. C.	31	3631
HQ-ET	Vitale, J. A.	PURDUE UNIVERSITY	NGL 15-005-186	Weismiller, R. A.	39	2106
HQ-ET	Vitale, J. A.	SO DAKOTA STATE UNIV	NGL 42-003-007	Myers, V. I.	39	3331
HQ-ET	Bivins, R. G.	SOUTHEASTN OKLA ST U	NASW 2881	Gold, C. H.	99	3178
HQ-ET	Bivins, R. G.	SOUTHEASTN OKLA ST U	NASW 3007	Gold, C. H.	99	3179
HQ-ET	Roberson, F. I.	STANFORD UNIVERSITY	NASW 3204	McAlister, J. F.	39	1304
HQ-ET	Dolby, W.	ST UNIV SYSTM OF FLA	NASW 3060	Unavailable	99	1874
HQ-ET	Vitale, J. A.	TEXAS A&M UNIVERSITY	NGL 44-001-001	Blanchard, B. J.	39	3448
HQ-ET	Vitale, J. A.	UNIV ALASKA-FAIRBNKS	NGL 02-001-092	Miller, J. M.	39	1071
HQ-ET	Vitale, J. A.	UNIV OF ARIZONA	NGL 03-002-313	Johnson, J. D.	39	1115
HQ-ET	Vitale, J. A.	UNIV OF ARIZONA	NSG 7333	Bier, M.	59	1149
HQ-ET	Vitale, J. A.	UNIV COLORADO-BOLDR	NGL 06-003-200	Ives, J. D.	39	1696
HQ-ET	Bivins, R. G.	UNIV OF CONNECTICUT	NASW 3059	Wilde, D.	99	1753
HQ-ET	Bivins, R. G	UNIV OF CONNECTICUT	NASW 3191	Unavailable	99	1754
HQ-ET	Ault, L. A.	UNIV OF DENVER	NASW 2892	Johnson, F. D.	99	1737
HQ-ET	Hargrave, C.	UNIV OF DENVER	NASW 2992	Unavailable	22	1738
HQ-ET	Ault, L. A.	UNIV OF DENVER	NASW 3021	Unavailable	99	1739
HQ-ET	Ault, L. A.	UNIV OF DENVER	NASW 3113	Johnson, F. D.	99	1740
HQ-ET	Vitale, J. A.	UNIV OF FLORIDA	NSG 7236	Ruth, B. E.	39	1900
HQ-ET	Harrison, J. O.	UNIV OF GEORGIA	NASW 2948	Unavailable	99	1980
HQ-ET	Vitale, J. A.	UNIV OF KANSAS	NGL 17-004-024	Barr, B. G.	39	2178
HQ-ET	Dolby, W.	UNIV OF KENTUCKY	NASW 3039	Unavailable	99	2208
HQ-ET	Vitale, J. A.	U MINN-MNPLS-ST PAUL	NGL 24-005-263	Shepherd, W. G.	39	2649
HQ-ET	Vitale, J. A.	UNIV NEBRASKA-LINCLN	NGL 28-004-020	Carlson, M. P.	39	2736
HQ-ET	Bivins, R. G.	UNIV OF NEW MEXICO	NASW 2936	Unavailable	99	2824
HQ-ET	Holley, H. L.	UNIV OF SOUTHERN CAL	NASW 2771	Unavailable	99	1634
HQ-ET	Gilbert, R.	UNIV OF SOUTHERN CAL	NASW 3009	Unavailable	99	1635
HQ-ET	Bivins, R. G.	UNIV OF SOUTHERN CAL	NASW 3031	Munushan, J.	99	1636
HQ-ET	Vitale, J. A.	UNIV OF UTAH	NSG 7226	Ridd, M. K.	39	3591
HQ-ET	Vitale, J. A.	UNIV OF VERMONT	NSG 7453	John, H. H.	32	3605
HQ-ET	Vitale, J. A.	UNIV WISC-MADISON	NGL 50-002-127	Clapp, J. L.	39	3815
HQ-FE	Rich, W. B.	CAL STATE U-CHICO	NASW 2835	Unavailable	99	1216
HQ-ET	Bivins, R. G.	UNIV OF PITTSBURGH	NASW 3042	Unavailable	99	3291
HQ-LU	Pohly, J. G.	BENNETT COLLEGE-NC	NGT 34-017-001	Sayles, J. N.	99	3030
HQ-LU	Pohly, J. G.	BOWIE STATE COLLEGE	NGT 21-027-012	Kirksey, C. H.	99	2246
HQ-LU	Pohly, J. G.	CAL STATE U-L ANGLES	NSG 7229	Maniv, R.	46	1224
HQ-LU	Carter, C. H.	CASE WESTERN RESERVE	NGT 36-027-011	Bennett, W. R.	49	3071
HQ-LU	Pohly, J. G.	CLARK COLLEGE	NSG 7267	Sinha, O. P.	13	1925

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HQ-LU	Pohly, J. G.	CLEVELAND STATE UNIV	NGT 36-025-780	Bennett, W. R.	49	3095
HQ-LU	Pohly, J. G.	DELAWARE STATE COL	NGR 08-002-001	Helmy, E. M.	13	1765
HQ-LU	Pohly, J. G.	FLORIDA A&M UNIV	NSG 901	Jones, H. J.	13	1853
HQ-LU	Carter, C. H.	HARVARD UNIVERSITY	NSG 7176	Field, G. B.	11	2401
HQ-LU	Pohly, J. G.	HOWARD UNIVERSITY	NGL 09-011-046	Ferguson, G. A.	39	1826
HQ-LU	Pohly, J. G.	HOWARD UNIVERSITY	NGT 09-011-058	Cox, E. L.	49	1828
HQ-LU	Carter, C. H.	HOWARD UNIVERSITY	NGT 09-011-060	Fan, D. N.	99	1829
HQ-LU	Pohly, J. G.	LINCOLN UNIV-PA	NGT 39-108-750	Williams, W., Jr.	49	3240
HQ-LU	Carter, C. H.	MASS INST OF TECH	NGL 22-009-638	McCarthy, J. F., Jr.	99	2450
HQ-LU	Pohly, J. G.	MOREHOUSE COLLEGE	NGT 11-008-004	Hall, J.	99	1968
HQ-LU	Pohly, J. G.	MOREHOUSE COLLEGE	NSG 7269	Hall, J.	31	1969
HQ-LU	Pohly, J. G.	MORGAN STATE UNIV	NGT 21-025-006	Proctor, N. K.	19	2275
HQ-LU	Pohly, J. G.	NM HIGHLANDS UNIV	NGT 32-010-001	Zenick, H.	99	2803
HQ-LU	Pohly, J. G.	NORTHWESTERN UNIV	NGT 14-007-780	Ingersoll, D.	49	2017
HQ-LU	Nicogossian, A.	OHIO STATE UNIV	NGT 36-008-007	Keller, M. D.	52	3116
HQ-LU	Pohly, J. G.	OHIO STATE UNIV	NGT 36-008-780	Stranges, J.	49	3117
HQ-LU	Carter, C. H.	OLD DOMINION UNIV	NGT 47-003-028	McRee, G. J.	49	3633
HQ-LU	Carter, C. H.	OLD DOMINION UNIV	NGT 47-003-029	Goglia, G. L.	49	3634
HQ-LU	Pohly, J. G.	PAN AMERICAN UNIV	NSG 7298	Glaser, F. M.	31	3396
HQ-LU	Pohly, J. G.	PRAIRIE VIEW A&M U	NGT 44-033-750	Greaux, A. E.	49	3399
HQ-LU	Pohly, J. G.	SPELMAN COLLEGE	NGT 11-013-001	Falconer, E.	99	1979
HQ-LU	Carter, C. H.	STANFORD UNIVERSITY	NGT 05-020-409	Barfield, B. F.	49	1341
HQ-LU	Carter, C. H.	STANFORD UNIVERSITY	NGT 05-020-412	Bershader, D.	49	1342
HQ-LU	Carter, C. H.	STANFORD UNIVERSITY	NGT 05-020-777	Beard, R. R.	59	1343
HQ-LU	Pohly, J. G.	TENNESSEE STATE UNIV	NGT 43-014-750	Malkani, M. J.	49	3338
HQ-LU	Pohly, J. G.	TEXAS A&I UNIVERSITY	NGT 44-073-750	Franke, E. A.	49	3427
HQ-LU	Pohly, J. G.	TUSKEGEE INSTITUTE	NGT 01-005-750	Dybczak, Z. W.	49	1034
HQ-LU	Pohly, J. G.	TUSKEGEE INSTITUTE	NGT 01-005-780	Sams, U. H.	49	1035
HQ-LU	Pohly, J. G.	UNIV OF AKRON	NGT 36-001-780	Velez, V.	49	3134
HQ-LU	Carter, C. H.	UNIV ALA-HUNTSVILLE	NGT 01-008-021	Head, R. R.	49	1061
HQ-LU	Carter, C. H.	UNIV ALA-UNIVERSITY	NGT 01-002-080	Barfield, B. F.	49	1067
HQ-LU	Carter, C. H.	UNIV ALA-UNIVERSITY	NGT 01-002-095	Lueg, R. E.	49	1068
HQ-LU	Carter, C. H.	UNIV ALA-UNIVERSITY	NGT 01-002-099	Barfield, B. F.	49	1069
HQ-LU	Carter, C. H.	UNIV CALIF-BERKELEY	NGL 05-003-497	Anderson, K. A.	99	1417
HQ-LU	Carter, C. H.	UNIV OF CHICAGO	NGL 14-001-258	Simpson, J. A.	99	2041
HQ-LU	Pohly, J. G.	UNIV OF CINCINNATI	NGT 36-004-780	Brown, J.	49	3136
HQ-LU	Carter, C. H.	UNIV HOUSTON-HOUSTON	NGT 44-005-114	Huang, C. J.	49	3481
HQ-LU	Carter, C. H.	UNIV HOUSTON-HOUSTON	NGT 44-005-115	Huang, C. J.	49	3482
HQ-LU	Carter, C. H.	UNIV MARYLAND-COL PK	NGT 21-002-254	Emad, F. P.	49	2316
HQ-LU	Carter, C. H.	U MINN-MNPLS-ST PAUL	NGT 24-005-078	Anderson, G. W.	99	2653
HQ-LU	Pohly, J. G.	UNIV OF NEW MEXICO	NGT 32-004-770	Etter, D. M.	49	2833
HQ-LU	Pohly, J. G.	UNIV OKLAHOMA-NORMAN	NGT 37-003-760	Thomas, G.	49	3185
HQ-LU	Carter, C. H.	UNIV TEXAS-DALLAS	NGL 44-004-130	Johnson, F. S.	99	3559
HQ-MT	Puttkamer, J.	GEORGETOWN UNIV	NASW 3152	Cheston, P. S.	99	1816
HQ-MT	Roberts, J. L.	MASS INST OF TECH	NGR 22-009-735	Chapman, P. K.	13	2467
HQ-RE	Gevarter, W. B.	MASS INST OF TECH	NSG 7227	Weinstein, M.	49	2531
HQ-RE	Gevarter, W. B.	RENSSELAER POLY-NY	NSG 7184	Shen, C. N.	19	2974
HQ-RE	Gevarter, W. B.	RENSSELAER POLY-NY	NSG 7369	Yurazunis, S. W.	49	2976
HQ-RE	Pontious, C. E.	STANFORD UNIVERSITY	NASW 2916	McCarthy, J.	45	1303
HQ-RE	Fitzmaurice, M. W.	STANFORD UNIVERSITY	NGL 05-020-103	Harris, S. E.	45	1321
HQ-RE	Gevarter, W. B.	UNIV MARYLAND-COL PK	NGR 21-002-270	Minker, J.	21	2308
HQ-RP	Lazar, J.	PRINCETON UNIVERSITY	NGL 31-001-005	Jahn, R. G.	42	2775
HQ-RR	Schwenk, F. C.	CALIF INST OF TECH	NSG 7275	Vaughan, R.	13	1207
HQ-RR	Henry, W.	CALIF INST OF TECH	NSG 7458	Ahrens, T. J.	13	1213
HQ-RR	Schwenk, F. C.	MASS INST OF TECH	NSG 7396	Mar, J. W.	42	2539
HQ-RR	Henry, W.	RICE UNIVERSITY	NSG 7490	Coleson, W. B.	45	3423
HQ-RR	Thom, K.	STANFORD UNIVERSITY	NSG 7110	Pantell, R. H.	13	1382
HQ-RR	Henry, W.	UNIV CALIF-IRVINE	NSG 7472	Wallis, R. F.	13	1466

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TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	GRANT/ CONTRACT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
HQ-RR	Thom, K.	UNIV OF FLORIDA	NGL 10-005-089	Schneider, R. T.	13	1886
HQ-RR	Thom, K.	UNIV OF FLORIDA	NSG 7299	Schneider, R. T.	13	1901
HQ-RR	Randolph, L. P.	UNIV ILLINOIS-CHICGO	NSG 7247	Barcilon, V.	21	2062
HQ-RR	Schwenk, F. C.	UNIV OF IOWA	NSG 7257	Valanis, K. C.	47	2162
HQ-RR	Henry, W.	UNIV OF IOWA	NSG 7471	Stwalley, W. C.	13	2164
HQ-RR	Lundholm, J. G., Jr.	UNIV MARYLAND-COL PK	NSG 7196	Weber, J.	13	2341
HQ-RR	Randolph, L. P.	UNIV MARYLAND-COL PK	NSG 7253	Reiger, C. J.	22	2343
HQ-RR	Lundholm, J. G., Jr.	U MINN-MNPLS-ST PAUL	NSG 7296	Scriven, L. E.	13	2669
HQ-RR	Randolph, L. P.	UNIV OF UTAH	NASW 2967	Vali, V.	13	3587
HQ-RR	Schwenk, F. C.	UNIV OF WASHINGTON	NGL 48-002-044	Hertzberg, A.	13	3767
HQ-RW	Gilstad, D. A.	RENSSELAER POLY-NY	NGL 33-018-003	Wiberly, S. E.	47	2966
HQ-RW	Gangler, J. J.	UNIV OF WASHINGTON	NGL 48-002-004	Mueller, J. I.	47	3765
HQ-RX	Rollins, R. H.	UNIV OF VIRGINIA	NSG 7266	Kuhlthau, A. R.	72	3703
HQ-SB	Young, R. S.	AMHERST COLLEGE	NSG 7325	Leadbetter, E. R.	51	2357
HQ-SB	Young, R. S.	ARIZONA STATE UNIV	NSG 7255	Cronin, J. R.	32	1089
HQ-SB	Larson, C. A.	BOSTON UNIVERSITY	NGR 22-004-018	Fulton, G. P.	59	2362
HQ-SB	Young, R. S.	BOSTON UNIVERSITY	NGR 22-004-025	Margulis, L.	32	2363
HQ-SB	Young, R. S.	CALIF INST OF TECH	NGR 05-002-121	Horowitz, N. H.	51	1184
HQ-SB	Winter, D. L.	CALIF INST OF TECH	NSG 7387	Strumwasser, F.	51	1211
HQ-SB	Young, R. S.	CAL STATE U-L ANGLES	NSG 7261	Bragin, J.	12	1225
HQ-SB	Halstead, T. W.	CLARKSON COL OF TECH	NSG 7170	McNulty, P. J.	59	2849
HQ-SB	Young, R. S.	CORNELL UNIVERSITY	NGR 33-010-101	Sagan, C. E.	12	2900
HQ-SB	Young, R. S.	CORNELL UNIVERSITY	NSG 7235	MacDonald, R. E.	51	2919
HQ-SB	Young, R. S.	FLORIDA STATE UNIV	NGR 10-004-041	Larock, P. A.	51	1864
HQ-SB	Young, R. S.	FLORIDA STATE UNIV	NSG 7337	Friedmann, E. I.	51	1867
HQ-SB	Young, R. S.	GEORGE WASHINGTON U	NASW 2890	Unavailable	75	1787
HQ-SB	Halstead, T. W.	GEORGE WASHINGTON U	NASW 3029	Head, M. C.	75	1788
HQ-SB	Halstead, T. W.	GEORGE WASHINGTON U	NASW 3165	Waters, E.	51	1789
HQ-SB	Young, R. S.	GEORGIA INST OF TECH	NSG 7069	Hubbard, J. S.	51	1965
HQ-SB	Young, R. S.	HARDIN-SIMMONS UNIV	NGR 44-095-001	Foster, T. L.	51	3390
HQ-SB	Young, R. S.	HARVARD UNIVERSITY	NGL 22-007-069	Barghoorn, E. S.	32	2379
HQ-SB	Young, R. S.	INDIANA U-BLOOMINGTN	NGR 15-003-118	Hayes, J. M.	32	2092
HQ-SB	Young, R. S.	INDIANA U-BLOOMINGTN	NSG 7389	Ripley, E. M.	32	2093
HQ-SB	Young, R. S.	MASS INST OF TECH	NGR 22-009-005	Biemann, K.	51	2452
HQ-SB	Young, R. S.	MASS INST OF TECH	NGR 22-009-277	Rich, A.	12	2453
HQ-SB	Halstead, T. W.	OHIO UNIVERSITY	NSG 7352	Jaffe, M. J.	51	3133
HQ-SB	Young, R. S.	PENN STATE U-UNIV PK	NGR 39-009-180	Casida, L. E., Jr.	51	3258
HQ-SB	Young, R. S.	POLY INST OF NY	NGR 33-006-070	Eirich, F. R.	12	2946
HQ-SB	Halstead, T. W.	PRINCETON UNIVERSITY	NSG 7280	Jacobs, W. P.	51	2794
HQ-SB	Halstead, T. W.	PURDUE UNIVERSITY	NSG 7278	Mitchell, C. A.	51	2119
HQ-SB	Young, R. S.	RENSSELAER POLY-NY	NGR 33-018-148	Ferris, J. P.	12	2969
HQ-SB	Young, R. S.	RENSSELAER POLY-NY	NSG 7065	Wedler, F. C.	51	2973
HQ-SB	Young, R. S.	RENSSELAER POLY-NY	NSG 7345	Pope, D. H.	51	2975
HQ-SB	Halstead, T. W.	RICE UNIVERSITY	NASW 3164	Ward, C. H.	51	3410
HQ-SB	Young, R. S.	SO ILL UNIV-CARBONDL	NGR 14-008-026	Yopp, J. H.	51	2025
HQ-SB	Young, R. S.	SO ILL UNIV-CARBONDL	NSG 7394	Yopp, J. H.	51	2027
HQ-SB	Young, R. S.	STANFORD UNIVERSITY	NGL 05-020-582	Bonner, W. A.	59	1326
HQ-SB	Young, R. S.	STANFORD UNIVERSITY	NGR 05-020-004	Lederberg, J.	51	1328
HQ-SB	Young, R. S.	STATE U NY-STONY BRK	NGR 33-015-169	Owen, T.	12	3001
HQ-SB	Halstead, T. W.	STATE U NY-STONY BRK	NSG 7270	Krikorian, A. D.	51	3012
HQ-SB	Young, R. S.	TEXAS A&M UNIVERSITY	NSG 7037	Fendler, J. H.	12	3459
HQ-SB	Halstead, T. W.	TEXAS TECH UNIV	NSG 7435	Hartman, H. B.	51	3465
HQ-SB	Young, R. S.	UNIV ALA-BIRMINGHAM	NGR 01-010-001	Lacey, J. C., Jr.	12	1042
HQ-SB	Young, R. S.	UNIV OF ARIZONA	NGR 03-002-171	Nagy, B.	32	1117
HQ-SB	Young, R. S.	UNIV CALIF-BERKELEY	NGL 05-003-003	Calvin, M.	32	1410
HQ-SB	Young, R. S.	UNIV CALIF-BERKELEY	NGR 05-003-460	Jukes, J. H.	12	1423
HQ-SB	Halstead, T. W.	UNIV CALIF-BERKELEY	NSG 7262	Pace, N.	51	1449
HQ-SB	Halstead, T. W.	UNIV CALIF-BERKELEY	NSG 7336	Pace, N.	51	1451

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HQ-SB	Young, R. S.	UNIV CALIF-L ANGELES	NGR 05-007-221	Kaplan, I. R.	32	1482
HQ-SB	Young, R. S.	UNIV CALIF-L ANGELES	NGR 05-007-407	Schopf, J. W.	32	1489
HQ-SB	Young, R. S.	UNIV CALIF-SAN DIEGO	NGR 05-009-213	Yayanos, A. A.	51	1554
HQ-SB	Young, R. S.	UNIV CALIF-SAN DIEGO	NGR 05-009-218	Miller, S. L.	12	1555
HQ-SB	Young, R. S.	UNIV CALIF-SAN FRAN	NSG 7151	Stoeckenius, W.	51	1587
HQ-SB	Larson, C. A.	UNIV OF CHICAGO	NSG 7303	Moran, H. F.	51	2056
HQ-SB	Young, R. S.	UNIV OF CONNECTICUT	NSG 7450	Leadbetter, E. R.	51	1757
HQ-SB	Young, R. S.	UNIV OF HAWAII-MANOA	NGL 12-001-042	Siegel, S. M.	51	1988
HQ-SB	Young, R. S.	UNIV OF HAWAII-MANOA	NGR 12-001-109	Folsome, C. E.	12	1991
HQ-SB	Young, R. S.	UNIV HOUSTON-HOUSTON	NGR 44-005-002	Oro, J.	32	3477
HQ-SB	Young, R. S.	UNIV HOUSTON-HOUSTON	NGR 44-005-091	Becker, R. S.	12	3478
HQ-SB	Halstead, T. W.	UNIV HOUSTON-HOUSTON	NSG 7300	Hendrix, D. H.	51	3487
HQ-SB	Young, R. S.	UNIV HOUSTON-HOUSTON	NSG 7440	Fox, G. E.	51	3489
HQ-SB	Halstead, T. W.	UNIV HOUSTON-HOUSTON	NSG 9042	Coules, J. R.	51	3490
HQ-SB	Young, R. S.	UNIV ILLINOIS-URBANA	NSG 7044	Woese, C. R.	12	2084
HQ-SB	Halstead, T. W.	UNIV OF LOUISVILLE	NSG 7441	Fuller, P. M.	51	2221
HQ-SB	Young, R. S.	UNIV MARYLAND-COL PK	NGR 21-002-317	Ponnamperuma, C. A.	12	2311
HQ-SB	Young, R. S.	UNIV MD-EASTRN SHORE	NSG 7470	Joshi, J. M.	51	2356
HQ-SB	Young, R. S.	UNIV OF MASS-AMHERST	NSG 7397	Huguenin, R. L.	12	2554
HQ-SB	Young, R. S.	UNIV OF MIAMI	NGR 10-007-008	Fox, S. W.	12	1910
HQ-SB	Young, R. S.	UNIV MICH-ANN ARBOR	NSG 7308	Kuhn, W. R.	31	2631
HQ-SB	Young, R. S.	UNIV MICH-ANN ARBOR	NSG 7452	Rich, A.	51	2633
HQ-SB	Halstead, T. W.	UNIV MICH-ANN ARBOR	NSG 9047	Ross, M. D.	51	2634
HQ-SB	Halstead, T. W.	UNIV OF PENNSYLVANIA	NGR 39-010-149	Brown, A. H.	51	3286
HQ-SB	Young, R. S.	UNIV OF ROCHESTER	NSG 7366	Vishniac, H. S.	51	3025
HQ-SB	Young, R. S.	UNIV SO CAROLINA-COL	NSG 7096	Rohlfing, D. L.	51	3326
HQ-SB	Young, R. S.	UNIV OF SOUTHERN CAL	NSG 7367	Strehler, B. L.	51	1647
HQ-SB	Geib, D. S.	UNIV OF TOLEDO	NSG 7424	Diehn, B.	51	3167
HQ-SB	Young, R. S.	UTAH STATE UNIV	NSG 7038	Smith, G. G.	32	3599
HQ-SB	Young, R. S.	WORCESTER POLY INST	NSG 7154	Danielli, J. F.	51	2559
HQ-SB	Young, R. S.	WORCESTER POLY INST	NSG 7392	Plumb, R. C.	12	2560
HQ-SB	Young, R. S.	YALE UNIVERSITY	NGR 07-004-009	Morowitz, H. J.	51	1760
HQ-SB	Halstead, T. W.	YALE UNIVERSITY	NSG 7290	Galston, A. W.	51	1764
HQ-SC	Roman, N. G.	BOWLING GRN STATE U	NSG 7022	Ptak, R. L.	11	3060
HQ-SC	Roman, N. G.	CALIF INST OF TECH	NGL 05-002-134	Oke, J. B.	11	1176
HQ-SC	Boggess, N. W.	CALIF INST OF TECH	NGL 05-002-207	Neugebauer, G.	11	1180
HQ-SC	Fishman, G. J.	CALIF INST OF TECH	NGR 05-002-160	Vogt, R. E.	11	1185
HQ-SC	Roman, N. G.	CALIF INST OF TECH	NGR 05-002-256	Thorne, K. S.	11	1186
HQ-SC	Boggess, N. W.	COLUMBIA UNIVERSITY	NSG 7105	Green, S.	11	2884
HQ-SC	Sofia, S.	COLUMBIA UNIVERSITY	NSG 7248	Weisskopf, M. C.	11	2887
HQ-SC	Boggess, N. W.	CORNELL UNIVERSITY	NGR 33-010-172	Harwit, M. O.	11	2904
HQ-SC	Boggess, N. W.	CORNELL UNIVERSITY	NSG 7324	Houck, J. R.	11	2921
HQ-SC	Boggess, N. W.	HARVARD UNIVERSITY	NGR 22-007-270	Fazio, G. G.	11	2385
HQ-SC	Opp, A. G.	HARVARD UNIVERSITY	NGR 22-007-272	Cameron, A. G.	11	2386
HQ-SC	Rosendahl, J.	HARVARD UNIVERSITY	NSG 7304	Parkinson, W. H.	31	2402
HQ-SC	Opp, A. G.	JOHNS HOPKINS UNIV	NSG 7449	Davidsen, A. F.	11	2272
HQ-SC	Opp, A. G.	MASS INST OF TECH	NGL 22-009-015	Clark, G. W.	13	2444
HQ-SC	Boggess, N. W.	MASS INST OF TECH	NGR 22-009-526	Weiss, R.	11	2456
HQ-SC	Boggess, N. W.	MASS INST OF TECH	NSG 7186	Kleinmann, S.	11	2530
HQ-SC	Boggess, N. W.	MASS INST OF TECH	NSG 7328	Weiss, R.	11	2534
HQ-SC	Opp, A. G.	MASS INST OF TECH	NSG 7339	Lewin, W. G.	11	2538
HQ-SC	Roman, N. G.	MONTANA STATE UNIV	NGR 27-001-040	Nordtvedt, K., Jr.	11	2731
HQ-SC	Rosendhal, J. D.	NEW YORK UNIVERSITY	NGR 33-016-196	Glassgold, A. E.	13	2931
HQ-SC	Roman, N. G.	NORTHWESTERN UNIV	NGL 14-007-041	Huang, S. S.	11	2015
HQ-SC	Roman, N. G.	PRINCETON UNIVERSITY	NGL 31-001-007	Spitzer, L., Jr.	11	2776
HQ-SC	Boggess, N. W.	PRINCETON UNIVERSITY	NGR 31-001-202	Dicke, R. H.	13	2779
HQ-SC	Roman, N. G.	PRINCETON UNIVERSITY	NSG 7256	Bahcall, N. A.	11	2793
HQ-SC	Boggess, N. W.	PRINCETON UNIVERSITY	NSG 7302	Wilkinson, D.	11	2796

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HQ-SC	Rosendhal, J. D.	PRINCETON UNIVERSITY	NSG 7379	Schwarzschild, M.	11	2797
HQ-SC	Rosendhal, J. D.	PURDUE UNIVERSITY	NSG 7167	Moffett, T. J.	11	2118
HQ-SC	Sofia, S.	RICE UNIVERSITY	NSG 7015	Clayton, D. D.	11	3416
HQ-SC	Opp, A. G.	STANFORD UNIVERSITY	NGR 05-020-452	Hofstadter, R.	11	1331
HQ-SC	Opp, A. G.	STANFORD UNIVERSITY	NGR 05-020-668	Sturrock, P. A.	11	1338
HQ-SC	Roman, N. G.	STANFORD UNIVERSITY	NSG 7204	Will, C. M.	11	1384
HQ-SC	Roman, N. G.	STATE UNIV NY-ALBANY	NSG 7241	Weinberg, J. L.	11	2986
HQ-SC	Roman, N. G.	ST U NY COL-GENESEO	NGR 33-219-002	Meisel, D. D.	11	3018
HQ-SC	Fishman, G. J.	STATE U NY-STONY BRK	NGR 33-015-180	Forman, M. A.	11	3002
HQ-SC	Roman, N. G.	UNIV OF ARIZONA	NGL 03-002-017	Bashkin, S.	11	1110
HQ-SC	Boggess, N. W.	UNIV OF ARIZONA	NGR 03-002-269	Low, F. J.	11	1119
HQ-SC	Boggess, N. W.	UNIV OF ARZONA	NGR 03-002-371	Hoffman, W. F.	11	1122
HQ-SC	Opp, A. G.	UNIV OF ARIZONA	NSG 7101	Jokippi, J.	11	1139
HQ-SC	Roman, N. G.	UNIV OF ARIZONA	NSG 7142	Tifft, W. G.	45	1141
HQ-SC	Roman, N. G.	UNIV OF ARIZONA	NSG 7358	Gehrels, A. M.	11	1150
HQ-SC	Boggess, N. W.	UNIV OF ARIZONA	NSG 7368	Craine, E. R.	11	1151
HQ-SC	Rosendhal, J. D.	UNIV ARKANSAS-FAYETV	NSG 7106	Hughes, R. H.	11	1159
HQ-SC	Boggess, N. W.	UNIV CALIF-BERKELEY	NGL 05-003-272	Townes, C. H.	11	1412
HQ-SC	Sofia, S.	UNIV CALIF-BERKELEY	NGR 05-003-376	Price, P. B.	11	1419
HQ-SC	Sofia, S.	UNIV CALIF-BERKELEY	NGR 05-003-513	Heckman, H. H.	11	1426
HQ-SC	Fishman, G. J.	UNIV CALIF-BERKELEY	NGR 05-003-553	Alvarez, L. W.	11	1427
HQ-SC	Roman, N. G.	UNIV CALIF-BERKELEY	NGR 05-003-578	Silk, J. I.	11	1429
HQ-SC	Boggess, N. W.	UNIV CALIF-BERKELEY	NSG 7205	Richards, P. L.	11	1447
HQ-SC	Boggess, N. W.	UNIV CALIF-BERKELEY	NSG 7455	Smoot, G.	11	1453
HQ-SC	Opp, A. G.	UNIV CALIF-L ANGELES	NSG 7341	Kennel, C. F.	11	1522
HQ-SC	Fishman, G.	UNIV CALIF-RIVERSIDE	NGR 05-008-022	White, R. S.	11	1525
HQ-SC	Aucremanne, M. J.	UNIV CALIF-SAN DIEGO	NASW 2996	McIlwain, C. E.	31	1538
HQ-SC	Fishman, G. J.	UNIV CALIF-SAN DIEGO	NGL 05-005-003	Peterson, L. E.	13	1539
HQ-SC	Rosendhal, J. D.	UNIV CALIF-SAN DIEGO	NGL 05-005-004	Gould, R. J.	11	1540
HQ-SC	Rosendhal, J. D.	UNIV CALIF-SAN DIEGO	NGR 05-009-188	McIlwain, C. E.	11	1553
HQ-SC	Opp, A. G.	UNIV CALIF-SAN DIEGO	NSG 7294	Peterson, L. E.	11	1571
HQ-SC	Burbidge, E.	UNIV CALIF-SAN DIEGO	NSG 7377	Burbidge, M.	11	1572
HQ-SC	Boggess, N. W.	UNIV CALIF-S CRUZ	NGR 05-061-015	Rank, D. M.	11	1601
HQ-SC	Fishman, G. J.	UNIV OF CHICAGO	NGL 14-001-001	Parker, E. N.	11	2034
HQ-SC	Opp, A. G.	UNIV OF CHICAGO	NGL 14-001-005	Meyer, P.	11	2035
HQ-SC	Fishman, G. F.	UNIV OF CHICAGO	NGL 14-001-006	Simpson, J. A.	11	2036
HQ-SC	Rosendhal, J. D.	UNIV OF CHICAGO	NGR 14-001-147	Hobbs, L. M.	11	2044
HQ-SC	Opp, A. G.	UNIV OF CHICAGO	NSG 7464	Muller, D.	31	2058
HQ-SC	Roman, N. G.	UNIV COLORADO-BOLDR	NGR 06-003-179	Lillie, C. F.	11	1700
HQ-SC	Opp, A. G.	UNIV COLORADO-BOLDR	NSG 7128	McCray, R.	11	1717
HQ-SC	Roman, N. G.	UNIV COLORADO-BOLDR	NSG 7430	Conti, P. S.	11	1726
HQ-SC	Rosendhal, J.	UNIV COLORADO-BOLDR	NSG 7459	Timothy, J.	13	1727
HQ-SC	Rosendhal, J.	UNIV COLORADO-BOLDR	NSG 7460	Thomas, R.	13	1728
HQ-SC	Roman, N. G.	UNIV COLORADO-BOLDR	NSG 7477	Snow, T. P.	11	1729
HQ-SC	Roman, N. G.	UNIV OF FLORIDA	NSG 7143	Carr, T. D.	11	1899
HQ-SC	Roman, N. G.	UNIV MARYLAND-BALT	NGR 21-002-010	Misner, C. W.	11	2277
HQ-SC	Opp, A. G.	UNIV MARYLAND-COL PK	NGR 21-002-066	Earl, J. A.	11	2303
HQ-SC	Rosendhal, J. D.	UNIV MARYLAND-COL PK	NGR 21-002-073	Griem, H. R.	11	2304
HQ-SC	Opp, A. G.	UNIV MARYLAND-COL PK	NGR 21-002-224	Gloeckler, G.	11	2307
HQ-SC	Opp, A. G.	UNIV MARYLAND-COL PK	NSG 7252	Rose, W. K.	11	2342
HQ-SC	Rosendhal, J. D.	UNIV MARYLAND-COL PK	NSG 7284	Currie, D. G.	11	2345
HQ-SC	Rosendhal, J. D.	UNIV MICH-ANN ARBOR	NGR 23-005-464	Hiltner, W. A.	11	2603
HQ-SC	Sofia, S.	U MINN-MNPLS-ST PAUL	NGR 24-005-050	Waddington, C. J.	11	2650
HQ-SC	Boggess, N. W.	U MINN-MNPLS-ST PAUL	NSG 2014	Ney, E.	11	2655
HQ-SC	Roman, N. G.	U MINN-MNPLS-ST PAUL	NSG 7259	Gallagher, J. S.	11	2668
HQ-SC	Roman, N. G.	U MINN-MNPLS-ST PAUL	NSR 24-005-245	Luyten, W. J.	11	2671
HQ-SC	Opp, A. G.	UNIV NEW HAMP-DURHAM	NGL 30-002-021	Chupp, E. L.	11	2757
HQ-SC	Fishman, G. J.	UNIV NEW HAMP-DURHAM	NGR 30-002-052	Webber, W. R.	11	2758

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TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	GRANT/ CONTRACT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
HQ-SC	Rosendhal, J. D.	UNIV TEXAS-AUSTIN	NGR 44-012-209	VanDenBout, P. A.	11	3517
HQ-SC	Roman, N. G.	UNIV TEXAS-AUSTIN	NSG 7232	Shield, G. A.	11	3539
HQ-SC	Rosendhal, J. D.	UNIV TEXAS-AUSTIN	NSG 7347	Bengtson, R. D.	11	3542
HQ-SC	Roman, N. G.	UNIV TEXAS-AUSTIN	NSG 7371	Henize, K. G.	11	3544
HQ-SC	Boggess, N. W.	UNIV TEXAS-AUSTIN	NSG 7381	Evans, N. J., II	11	3545
HQ-SC	Rosendhal, J. D.	UNIV OF TOLEDO	NSG 7041	Witt, A. N.	11	3164
HQ-SC	Roman, N. G.	UNIV OF TOLEDO	NSG 7138	Molnar, M. R.	11	3165
HQ-SC	Rosendhal, J. D.	UNIV OF TOLEDO	NSG 7431	Witt, A. N.	11	3168
HQ-SC	Roman, N. G.	UNIV OF TOLEDO	NSG 7475	Molnar, M. R.	11	3169
HQ-SC	Roman, N. G.	UNIV OF VIRGINIA	NGL 47-005-066	Frederick, L. W.	11	3689
HQ-SC	Opp, A. G.	UNIV OF WASHINGTON	NSG 7318	Lord, J. J.	11	3784
HQ-SC	Roman, N. G.	UNIV WISC-MADISON	NSG 7050	Code, A. D.	11	3833
HQ-SC	Rosendhal, J. D.	UNIV WISC-MADISON	NSG 7133	Savage, B. D.	11	3834
HQ-SC	Roman, N. G.	VANDERBILT UNIVERSTY	NSG 7343	Weedman, D. W.	11	3378
HQ-SC	Roman, N. G.	VANDERBILT UNIVERSTY	NSG 7463	Hall, D.	11	3379
HQ-SC	Rosendhal, J. D.	VASSAR COLLEGE	NSG 7359	Hutchinson, J. L.	11	3026
HQ-SC	Fishman, G. J.	WASHINGTON UNIVERSTY	NGR 26-008-001	Israel, M. H.	11	2721
HQ-SC	Roman, N. G.	WASHINGTON UNIVERSTY	NSG 7372	Smith, W. H.	11	2728
HQ-SL	Brunk, W. E.	AMERICAN UNIVERSITY	NSG 7274	Prakash, A.	11	1777
HQ-SL	French, B. M.	ARIZONA STATE UNIV	NGL 03-001-001	Moore, C. B.	32	1084
HQ-SL	French, B. M.	ARIZONA STATE UNIV	NSG 7040	Larimer, J. W.	32	1088
HQ-SL	Dwornik, S. E.	ARIZONA STATE UNIV	NSG 7415	Greeley, R.	32	1090
HQ-SL	Quaide, W. L.	ARIZONA STATE UNIV	NSG 7429	Greeley, R.	32	1091
HQ-SL	Dwornik, S. E.	BROWN UNIVERSITY	NGR 40-002-088	Mutch, T. A.	32	3308
HQ-SL	Goldstein, B. E.	BROWN UNIVERSITY	NGR 40-002-116	Head, J. W.	32	3309
HQ-SL	Brunk, W. E.	CALIF INST OF TECH	NGL 05-002-003	Muhleman, D. O.	11	1172
HQ-SL	Quaide, W. L.	CALIF INST OF TECH	NGL 05-002-069	Anderson, D. L.	32	1174
HQ-SL	Quaide, W. L.	CALIF INST OF TECH	NGL 05-002-105	Ahrens, T. J.	32	1175
HQ-SL	Brunk, W. E.	CALIF INST OF TECH	NGL 05-002-140	Goldreich, P.	11	1177
HQ-SL	Brunk, W. E.	CALIF INST OF TECH	NGR 05-002-114	Muhleman, D. O.	11	1182
HQ-SL	Dwornik, S. E.	CALIF INST OF TECH	NGR 05-002-117	Murray, B. C.	32	1183
HQ-SL	Dwornik, S. E.	CALIF INST OF TECH	NGR 05-002-303	Shoemaker, E. M.	32	1189
HQ-SL	Fellows, R. F.	CALIF INST OF TECH	NSG 7094	Neugebauer, G.	32	1203
HQ-SL	Dwornik, S. E.	CALIF INST OF TECH	NSG 7125	Albee, A. L.	19	1204
HQ-SL	Quaide, W. L.	CALIF INST OF TECH	NSG 7129	Ahrens, T. J.	32	1205
HQ-SL	Quaide, W. L.	CALIF INST OF TECH	NSG 7202	Burnett, D. S.	32	1206
HQ-SL	Quaide, W. L.	CALIF INST OF TECH	NSG 7316	Melosh, H. J.	32	1208
HQ-SL	Mitz, M. A.	CALIF INST OF TECH	NSG 7376	Yung, Y. L.	31	1210
HQ-SL	Dwornik, S. E.	CALIF INST OF TECH	NSG 7442	Albee, A. L.	32	1212
HQ-SL	French, B. M.	CAL STATE U-FULLERTN	NSG 7314	Woolum, D. S.	32	1220
HQ-SL	Quaide, W. L.	COLUMBIA UNIVERSITY	NSG 7194	Keihm, S. J.	32	2885
HQ-SL	French, B. M.	COLUMBIA UNIVERSITY	NSG 7200	O'Nions, R. K.	32	2886
HQ-SL	Quaide, W. L.	COLUMBIA UNIVERSITY	NSG 7434	Takahashi, T.	32	2888
HQ-SL	French, B. E.	COLUMBIA UNIVERSITY	NSG 7466	O'Nions, R. K.	32	2889
HQ-SL	Donn, B. D.	CORNELL UNIVERSITY	NGL 33-010-082	Sagan, C. E.	31	2896
HQ-SL	Brunk, W. M.	CORNELL UNIVERSITY	NGL 33-010-186	Gierasch, P. J.	31	2898
HQ-SL	Quaide, W. L.	CORNELL UNIVERSITY	NGR 33-010-108	Turcotte, D. L.	32	2901
HQ-SL	Dwornik, S. E.	CORNELL UNIVERSITY	NGR 33-010-220	Sagan, C. E.	32	2908
HQ-SL	Brunk, W. E.	CORNELL UNIVERSITY	NSG 7126	Veverka, J.	11	2917
HQ-SL	Dwornik, S. E.	CORNELL UNIVERSITY	NSG 7156	Veverka, J.	32	2918
HQ-SL	Kochendorfer, F. D.	CORNELL UNIVERSITY	NSG 7268	Harwit, M. O.	32	2920
HQ-SL	Goldstein, B. E.	CORNELL UNIVERSITY	NSG 7348	Gold, T.	32	2922
HQ-SL	Quaide, W. L.	CORNELL UNIVERSITY	NSG 7445	Burns, J. A.	31	2923
HQ-SL	Brunk, W. E.	FLORIDA STATE UNIV	NGR 10-004-056	Hunt, R. H.	11	1865
HQ-SL	Fellows, R. F.	GEORGIA INST OF TECH	NGL 11-002-004	Edwards, H. D.	31	1950
HQ-SL	Murphy, R. E.	HARVARD UNIVERSITY	NGL 22-007-228	Goody, R. M.	31	2381
HQ-SL	Dwornik, S. E.	HARVARD UNIVERSITY	NGR 22-007-269	Cameron, A. G.	32	2384
HQ-SL	Donn, B. D.	HARVARD UNIVERSITY	NSG 7095	Dennison, B. K.	31	2400

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HQ-SL	Brunk, W. E.	HARVARD UNIVERSITY	NSG 7332	Goody, R. M.	11	2403
HQ-SL	Dwornik, S. E.	HARVARD UNIVERSITY	NSG 7398	Goody, R. M.	32	2405
HQ-SL	Donn, B. D.	HOWARD UNIVERSITY	NSG 7378	Jackson, W. M.	12	1840
HQ-SL	Donn, B. D.	JOHNS HOPKINS UNIV	NSG 7382	Feldman, P. D.	11	2271
HQ-SL	Murphy, R. E.	KANSAS STATE UNIV	NGL 17-001-026	Williams, D. B.	31	2168
HQ-SL	French, B. M.	LEHIGH UNIVERSITY	NGR 39-007-043	Goldstein, J. I.	32	3232
HQ-SL	Smith, M. J.	MASS INST OF TECH	NASW 3008	McCord, T. B.	11	2440
HQ-SL	Kosofsky, L. J.	MASS INST OF TECH	NGL 22-009-187	Press, F.	32	2446
HQ-SL	Dwornik, S. E.	MASS INST OF TECH	NGL 22-009-521	Lewis, J. S.	31	2449
HQ-SL	Fellows, R. F.	MASS INST OF TECH	NGR 22-009-583	McCord, T. B.	11	2459
HQ-SL	Brunk, W. E.	MASS INST OF TECH	NGR 22-009-672	Pettengill, G. H.	11	2462
HQ-SL	Williams, R. J.	MASS INST OF TECH	NGR 22-009-790	McCord, T. B.	32	2471
HQ-SL	Quaide, W. L.	MASS INST OF TECH	NSG 7010	Counselman, C. C., III	32	2525
HQ-SL	Williams, R. J.	MASS INST OF TECH	NSG 7048	McCord, T. B.	32	2526
HQ-SL	Williams, R. J.	MASS INST OF TECH	NSG 7077	Suomi, V. E.	32	2527
HQ-SL	Quaide, W. L.	MASS INST OF TECH	NSG 7081	Toksoz, M. N.	32	2528
HQ-SL	Goldstein, B. E.	MASS INST OF TECH	NSG 7118	Counselman, C. C., III	32	2529
HQ-SL	Dwornik, S. E.	MASS INST OF TECH	NSG 7273	McCord, T. B.	32	2532
HQ-SL	Dwornik, S. E.	MASS INST OF TECH	NSG 7297	Solomon, S. C.	32	2533
HQ-SL	Quaide, W. L.	MASS INST OF TECH	NSG 7338	Burns, R. G.	32	2537
HQ-SL	Dwornik, S. E.	MASS INST OF TECH	NSG 7432	Biemann, K.	32	2541
HQ-SL	Dwornik, S. E.	MASS INST OF TECH	NSG 7438	Solomon, S. C.	32	2542
HQ-SL	Quaide, W.	MASS INST OF TECH	NSG 7467	Pinson, W.	32	2543
HQ-SL	Brunk, W. E.	NEW MEX ST U-LAS CR	NGL 32-003-001	Beebe, R. F.	11	2819
HQ-SL	Donn, B. D.	NEW MEX ST U-LAS CR	NSG 7346	Beebe, H. A.	11	2821
HQ-SL	Dwornik, S. E.	NE LOUISIANA UNIV	NSG 7357	DeHon, R. A.	32	2226
HQ-SL	Quaide, W. L.	NE LOUISIANA UNIV	NSG 7420	DeHon, R. A.	32	2227
HQ-SL	Bryson, R. P.	OREGON STATE UNIV	NGL 38-002-020	Schmitt, R. A.	32	3195
HQ-SL	Dwornik, S. E.	OREGON STATE UNIV	NSG 7178	Komar, P. D.	32	3199
HQ-SL	Quaide, W. L.	PENN STATE U-UNIV PK	NGL 39-009-010	Gold, D. P.	32	3254
HQ-SL	Goldstein, B. E.	PENN STATE U-UNIV PK	NSG 7120	Muan, A.	32	3277
HQ-SL	Goldstein, B. E.	PENN STATE U-UNIV PK	NSG 7193	Alexander, S. S.	32	3278
HQ-SL	Quaide, W.	PENN STATE U-UNIV PK	NSG 7465	Eggler, D.	32	3280
HQ-SL	Murphy, R. E.	POLY INST OF NY	NGR 33-006-068	Gross, S. H.	31	2945
HQ-SL	Quaide, W. L.	PRINCETON UNIVERSITY	NSG 7080	Phinney, R. A.	32	2792
HQ-SL	Dwornik, S. E.	PRINCETON UNIVERSITY	NSG 7283	Smoluchowski, R.	32	2795
HQ-SL	French, B. M.	PURDUE UNIVERSITY	NGL 15-005-140	Lipschutz, M. E.	32	2105
HQ-SL	Quaide, W. L.	QUEENS COLLEGE	NSG 7321	Takahashi, T.	32	2956
HQ-SL	Fellows, R. F.	RENSSELAER POLY-NY	NGL 33-018-007	Harteck, P.	31	2967
HQ-SL	Tarver, P.	RENSSELAER POLY-NY	NGL 33-018-091	Yerazunis, S. W.	49	2968
HQ-SL	Quaide, W. L.	RICE UNIVERSITY	NSG 7032	Michel, F. C.	31	3417
HQ-SL	Fellows, R. F.	RICE UNIVERSITY	NSG 7043	Chamberlain, J. W.	31	3418
HQ-SL	Quaide, W. L.	RICE UNIVERSITY	NSG 7361	Clayton, D. D.	32	3420
HQ-SL	Quaide, W. L.	RICE UNIVERSITY	NSG 7362	Debremaecker, J. C.	32	3421
HQ-SL	Donn, B. D.	RICE UNIVERSITY	NSG 7386	Stebbings, R. F.	31	3422
HQ-SL	French, B. M.	RUTGERS U-N BRUNSWK	NSG 7327	Hewins, R. H.	32	2799
HQ-SL	Goldstein, B. E.	SAN DIEGO STATE UNIV	NSG 7026	Rehfuss, D. E.	32	1237
HQ-SL	Murphy, R. E.	STANFORD UNIVERSITY	NGL 05-020-014	Eshleman, V. R.	31	1320
HQ-SL	Dwornik, S. E.	STANFORD UNIVERSITY	NGR 05-020-649	Howard, H. T.	32	1337
HQ-SL	Goldstein, B. E.	STANFORD UNIVERSITY	NSG 7029	Tyler, G. L.	32	1380
HQ-SL	Williams, R. J.	STANFORD UNIVERSITY	NSG 7117	Nur, A. M.	32	1383
HQ-SL	Brunk, W. E.	STANFORD UNIVERSITY	NSG 7395	Tyler, G. L.	11	1385
HQ-SL	Donn, B. D.	STATE UNIV NY-ALBANY	NSG 7093	Weinberg, J. L.	31	2984
HQ-SL	Donn, B. D.	STATE UNIV NY-ALBANY	NSG 7353	Schuerman, D. W.	11	2987
HQ-SL	Dwornik, S. E.	STATE UNIV NY-BUFFAL	NGR 33-015-108	King, J. S.	32	2991
HQ-SL	Brunk, W. E.	STATE U NY-STONY BRK	NGR 33-015-139	Varanasi, P.	31	2998
HQ-SL	Brunk, W. E.	STATE U NY-STONY BRK	NGR 33-015-141	Owen, T.	11	2999
HQ-SL	Williams, R. J.	STATE U NY-STONY BRK	NSG 7150	Papike, J. J.	32	3010

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HQ-SL	Williams, R. J.	STATE U NY-STONY BRK	NSG 7225	Schaeffer, O. A.	32	3011
HQ-SL	Brunk, W. E.	STATE U NY-STONY BRK	NSG 7286	Knacke, R. F.	11	3013
HQ-SL	Brunk, W. E.	STATE U NY-STONY BRK	NSG 7320	Caldwell, J. J.	11	3014
HQ-SL	Fellows, R. F.	TEXAS A&M UNIVERSITY	NGR 44-001-117	Plass, G. N.	31	3449
HQ-SL	Goldstein, B. E.	TEXAS A&M UNIVERSITY	NSG 7189	Gangi, A. F.	32	3460
HQ-SL	Murphy, R. E.	TEXAS A&M UNIVERSITY	NSG 7370	Young, A. T.	32	3461
HQ-SL	Quaide, W. L.	TEXAS A&M UNIVERSITY	NSG 7417	Gangi, A. F.	32	3462
HQ-SL	Dwornik, S. E.	UNIV OF ARIZONA	NASW 2944	Strom, R. G.	11	1106
HQ-SL	Brunk, W. E.	UNIV OF ARIZONA	NGL 03-002-002	Smith, B. A.	11	1109
HQ-SL	Fellows, R. F.	UNIV OF ARIZONA	NGL 03-002-019	Hoenig, S. A.	31	1111
HQ-SL	Brunk, W. E.	UNIV OF ARIZONA	NGL 03-002-081	Gehrels, T.	11	1112
HQ-SL	Brunk, W. E.	UNIV OF ARIZONA	NGL 03-002-122	Cox, E. L.	11	1113
HQ-SL	Williams, R. J.	UNIV OF ARIZONA	NGL 03-002-191	Strom, R. G.	32	1114
HQ-SL	Brunk, W. E.	UNIV OF ARIZONA	NGR 03-002-219	Gehrels, A. M.	11	1118
HQ-SL	Dwornik, S. E.	UNIV OF ARIZONA	NGR 03-002-370	Sonett, C. P.	32	1121
HQ-SL	French, B. M.	UNIV OF ARIZONA	NSG 7011	Wilkening, L. L.	32	1134
HQ-SL	Quaide, W. L.	UNIV OF ARIZONA	NSG 7020	Sonett, C. P.	32	1135
HQ-SL	Brunk, W. E.	UNIV OF ARIZONA	NSG 7045	Hubbard, W. B.	11	1137
HQ-SL	Brunk, W. E.	UNIV OF ARIZONA	NSG 7070	Fink, U. W.	11	1138
HQ-SL	Brunk, W. E.	UNIV OF ARIZONA	NSG 7114	Rieke, G. H.	11	1140
HQ-SL	Dwornik, S. E.	UNIV OF ARIZONA	NSG 7146	Strom, R. G.	32	1142
HQ-SL	Quaide, W. L.	UNIV OF ARIZONA	NSG 7201	Greenberg, R.	32	1144
HQ-SL	Brunk, W. E.	UNIV OF ARIZONA	NSG 7238	Hubbard, W. B.	11	1145
HQ-SL	French, B. M.	UNIV OF ARIZONA	NSG 7246	Gehrels, A. M.	32	1146
HQ-SL	French, B. M.	UNIV OF ARIZONA	NSG 7249	Zellner, B. H.	32	1147
HQ-SL	Fellows, R. F.	UNIV OF ARIZONA	NSG 7265	Smith, B.	31	1148
HQ-SL	Donn, B. D.	UNIV OF ARIZONA	NSG 7374	Hsieh, K. C.	11	1152
HQ-SL	Quaide, W. L.	UNIV OF ARIZONA	NSG 7419	Levy, E. H.	32	1153
HQ-SL	French, B. M.	UNIV OF ARIZONA	NSG 7436	Boynton, W. V.	32	1154
HQ-SL	Fellows, R. F.	UNIV CALIF-BERKELEY	NGL 05-003-286	Pimental, G. C.	31	1413
HQ-SL	Brunk, W. E.	UNIV CALIF-BERKELEY	NGR 05-003-452	Townes, C. H.	11	1422
HQ-SL	Quaide, W. L.	UNIV CALIF-BERKELEY	NSG 7127	Anderson, K. A.	39	1445
HQ-SL	Brunk, W. E.	UNIV CALIF-BERKELEY	NSG 7152	Welch, W. J.	11	1446
HQ-SL	Smith, M. J.	UNIV CALIF-BERKELEY	NSG 7277	Lin, R. P.	31	1450
HQ-SL	Quaide, W. L.	UNIV CALIF-L ANGELES	NGL 05-007-002	Kaula, W. M.	32	1478
HQ-SL	Dwornik, S. E.	UNIV CALIF-L ANGELES	NGR 05-007-317	Schubert, G.	32	1485
HQ-SL	French, B. M.	UNIV CALIF-L ANGELES	NGR 05-007-329	Wasson, J. T.	32	1487
HQ-SL	Quaide, W. L.	UNIV CALIF-L ANGELES	NGR 05-007-351	Coleman, P. J., Jr.	32	1488
HQ-SL	Quaide, W. L.	UNIV CALIF-L ANGELES	NSG 7052	Oertel, G.	32	1512
HQ-SL	Brunk, W. E.	UNIV CALIF-L ANGELES	NSG 7164	Schubert, G.	31	1514
HQ-SL	Donn, B. D.	UNIV CALIF-L ANGELES	NSG 7239	Aller, L. H.	31	1516
HQ-SL	Dwornik, S. E.	UNIV CALIF-L ANGELES	NSG 7282	Kieffer, H. H.	32	1518
HQ-SL	Dwornik, S. E.	UNIV CALIF-L ANGELES	NSG 7295	Coleman, P. J., Jr.	31	1519
HQ-SL	Quaide, W. L.	UNIV CALIF-L ANGELES	NSG 7315	Schubert, G.	32	1520
HQ-SL	French, B. M.	UNIV CALIF-L ANGELES	NSG 7335	Boynton, W. V.	32	1521
HQ-SL	Quaide, W. L.	UNIV CALIF-SAN DIEGO	NGL 05-009-002	Arrhenius, G.	32	1542
HQ-SL	French, B. M.	UNIV CALIF-SAN DIEGO	NGL 05-009-004	Arnold, J. R.	32	1543
HQ-SL	Quaide, W. L.	UNIV CALIF-SAN DIEGO	NGL 05-009-005	Suess, H. E.	19	1544
HQ-SL	Quaide, W. L.	UNIV CALIF-SAN DIEGO	NGR 05-005-005	Arnold, J. R.	32	1548
HQ-SL	Donn, B. D.	UNIV CALIF-SAN DIEGO	NGR 05-009-110	Alfven, H.	11	1552
HQ-SL	Quaide, W. L.	UNIV CALIF-SAN DIEGO	NSG 7027	Arnold, J. R.	32	1566
HQ-SL	Dwornik, S. E.	UNIV CALIF-SAN DIEGO	NSG 7102	Alfven, H.	32	1568
HQ-SL	French, B. M.	UNIV CALIF-SAN DIEGO	NSG 7121	MacDougall, J. D.	32	1569
HQ-SL	French, B. M.	UNIV CALIF-SAN DIEGO	NSG 7474	Rudee, M. L.	32	1574
HQ-SL	Dwornik, S. E.	UNIV CALIF-SAN DIEGO	W-14108	Alfven, H.	32	1576
HQ-SL	Dwornik, S. E.	UNIV CALIF-S BARBARA	NGR 05-010-062	Peale, S. J.	32	1593
HQ-SL	French, B. M.	UNIV OF CHICAGO	NGL 14-001-010	Anders, E.	32	2037
HQ-SL	Dwornik, S. E.	UNIV OF CHICAGO	NGR 14-001-135	Turkevich, A. L.	32	2043

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TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	GRANT/ CONTRACT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
HQ-SL	Fellows, R. F.	UNIV OF CHICAGO	NGR 14-001-194	Kaplan, L. D.	31	2045
HQ-SL	French, B. M.	UNIV OF CHICAGO	NGR 14-001-249	Grossman, L.	32	2049
HQ-SL	Quaide, W. L.	UNIV OF CHICAGO	NSG 7212	Schramm, D. N.	32	2054
HQ-SL	Brunk, W. E.	UNIV COLORADO-BOLDR	NGL 06-003-052	Barth, C. A.	31	1694
HQ-SL	Dwornik, S. E.	UNIV COLORADO-BOLDR	NGR 06-003-127	Barth, C. A.	31	1698
HQ-SL	Flinn, E. A.	UNIV COLORADO-BOLDR	NSG 7319	Smith, M. L.	32	1724
HQ-SL	Strickland, A. T.	UNIV COLORADO-BOLDR	NSG 7344	Levine, J.	13	1725
HQ-SL	Quaide, W. L.	UNIV OF DAYTON	NSG 7444	Piekutowski, A. J.	32	3155
HQ-SL	Donn, B. D.	UNIV OF FLORIDA	NGL 10-005-008	Green, A. S.	31	1885
HQ-SL	Boyce, J. M.	UNIV OF GEORGIA	NGR 11-003-037	Howard, J. H.	32	1981
HQ-SL	Dwornik, S. E.	UNIV OF GEORGIA	NSG 7433	Wenner, D. B.	32	1982
HQ-SL	Brunk, W. E.	UNIV OF HAWAII-MANOA	NASW 3159	Jefferies, J. T.	11	1985
HQ-SL	Brunk, W. E.	UNIV OF HAWAII-MANOA	NGL 12-001-057	Jefferies, J. T.	11	1989
HQ-SL	Finley, C. J.	UNIV OF HAWAII-MANOA	NGR 12-001-127	Jefferies, J. T.	32	1992
HQ-SL	Shirey, W. H.	UNIV OF HAWAII-MANOA	NSG 7179	Berg, E.	19	1998
HQ-SL	Brunk, W. E.	UNIV OF HAWAII-MANOA	NSG 7310	McCord, T. B.	11	1999
HQ-SL	Goldstein, B. E.	UNIV OF HAWAII-MANOA	NSG 7312	McCord, T. B.	32	2000
HQ-SL	Brunk, W. E.	UNIV OF HAWAII-MANOA	NSG 7323	McCord, T. B.	11	2001
HQ-SL	Dwornik, S. E.	UNIV OF HAWAII-MANOA	NSG 7403	Pilcher, C. B.	32	2002
HQ-SL	Quaide, W. L.	UNIV OF HAWAII-MANOA	NSG 7423	Russ, G. P.	32	2003
HQ-SL	Dwornik, S. E.	UNIV OF HAWAII-MANOA	NSG 7443	McCord, T. B.	32	2004
HQ-SL	Quaide, W. L.	UNIV OF HAWAII-MANOA	NSG 7462	Gaffey, M. J.	32	2005
HQ-SL	Dwornik, S. E.	UNIV HOUSTON-HOUSTON	NSG 7228	King, E. A.	32	3486
HQ-SL	Dwornik, S. E.	UNIV HOUSTON-HOUSTON	NSG 7410	Smith, R. S.	32	3488
HQ-SL	Brunk, W. E.	UNIV ILLINOIS-URBANA	NGR 14-005-176	Dickel, J. R.	11	2068
HQ-SL	Brunk, W. E.	UNIV OF IOWA	NSG 7412	Neff, J. S.	11	2163
HQ-SL	Goldstein, B. E.	UNIV OF KANSAS	NSG 7351	VanSchmus, W. R.	32	2198
HQ-SL	Donn, B. D.	UNIV MARYLAND-COL PK	NGR 21-002-002	Opik, E. J.	11	2302
HQ-SL	Quaide, W. L.	UNIV MARYLAND-COL PK	NSG 7046	Adler, I.	32	2340
HQ-SL	Williams, R. J.	UNIV MARYLAND-COL PK	NSG 7260	Ponnamperuma, C. A.	32	2344
HQ-SL	Brunk, W. E.	UNIV MARYLAND-COL PK	NSG 7322	A'Hearn, M. F.	11	2347
HQ-SL	Quaide, W. L.	UNIV MARYLAND-COL PK	NSG 7365	Pai, S. I.	32	2349
HQ-SL	Brunk, W. E.	UNIV OF MASS-AMHERST	NGL 22-010-023	Irvine, W. M.	11	2550
HQ-SL	Dwornik, S. E.	UNIV OF MASS-AMHERST	NGR 22-010-076	McGill, G. E.	32	2553
HQ-SL	Dwornik, S. E.	UNIV OF MASS-AMHERST	NSG 7405	Huguenin, R. L.	32	2555
HQ-SL	French, B. M.	UNIV OF MIAMI	NSG 7245	Fisher, D. E.	32	1914
HQ-SL	French, B. M.	UNIV OF MIAMI	NSG 7309	Fisher, D. E.	32	1915
HQ-SL	Fellows, R. F.	UNIV MICH-ANN ARBOR	NGR 23-005-094	Liu, W. C.	31	2600
HQ-SL	Donn, B. D.	UNIV MICH-ANN ARBOR	NGR 23-005-540	Bartman, F. L.	31	2605
HQ-SL	Fellows, R. F.	UNIV MICH-ANN ARBOR	NSG 7279	Donahue, T. M.	31	2630
HQ-SL	Dwornik, S. E.	UNIV MICH-ANN ARBOR	NSG 7404	Atreya, S. K.	31	2632
HQ-SL	Donn, B. D.	U MINN-MNPLS-ST PAUL	NGL 24-005-009	Nier, A. O.	31	2647
HQ-SL	Fellows, R. F.	UNIV NEBRASKA-LINCLN	NGR 28-004-021	Samson, J. A.	31	2737
HQ-SL	Goldstein, B. E.	UNIV OF NEW MEXICO	NGL 32-004-011	Elston, W. E.	32	2829
HQ-SL	French, B. M.	UNIV OF NEW MEXICO	NGL 32-004-064	Keil, K.	32	2831
HQ-SL	Dwornik, S. E.	UNIV OF NEW MEXICO	NGR 32-004-062	Elston, W. E.	32	2832
HQ-SL	Quaide, W. L.	UNIV OREGON-EUGENE	NGR 38-003-020	Weill, D. F.	32	3202
HQ-SL	Fellows, R. F.	UNIV OF PITTSBURGH	NGL 39-011-013	Fite, W. L.	31	3292
HQ-SL	Donn, B. D.	UNIV OF PITTSBURGH	NGL 39-011-030	Zipf, E. C., Jr.	31	3293
HQ-SL	Quaide, W. L.	UNIV OF PITTSBURGH	NGL 39-011-085	Cassidy, W. A.	32	3294
HQ-SL	Fellows, R. F.	UNIV OF PITTSBURGH	NGR 39-011-137	Biondi, M. A.	31	3295
HQ-SL	Boyce, J. M.	UNIV OF PITTSBURGH	NSG 7147	Hapke, B. W.	11	3305
HQ-SL	Dwornik, S. E.	UNIV OF RHODE ISLAND	NSG 7414	Boothroyd, J. C.	32	3315
HQ-SL	Dwornik, S. E.	UNIV OF SANTA CLARA	NGR 05-017-037	Greeley, R.	32	1625
HQ-SL	Goldstein, B. E.	UNIV OF SANTA CLARA	NSG 7141	Greeley, R.	32	1629
HQ-SL	Quaide, W. L.	UNIV OF SANTA CLARA	NSG 7330	Aggarwal, H. R.	32	1630
HQ-SL	Fellows, R. F.	UNIV SO CAROLINA-COL	NGL 41-002-003	Durig, J. R.	31	3322
HQ-SL	Dwornik, S. E.	UNIV SO CAROLINA-COL	NSG 7076	Nummedal, D.	32	3325

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TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	GRANT/ CONTRACT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
HQ-SL	Brunk, W. E.	UNIV OF SOUTHERN CAL	NGR 05-018-178	Maxworthy, T.	31	1638
HQ-SL	Mitz, M. A.	UNIV OF SOUTHERN CAL	NGR 05-018-180	Judge, D. L.	31	1639
HQ-SL	Fellows, R. F.	UNIV TENNESSEE-KNOXV	NGL 43-001-006	Gailar, N. M.	31	3358
HQ-SL	French, B. M.	UNIV TENNESSEE-KNOXV	NSG 7413	McSween, H. Y.	32	3368
HQ-SL	Brunk, W. E.	UNIV TEXAS-AUSTIN	NGL 44-012-006	Wilson, W. J.	11	3513
HQ-SL	Brunk, W. E.	UNIV TEXAS-AUSTIN	NGL 44-012-055	Douglas, J. N.	11	3514
HQ-SL	Brunk, W. E.	UNIV TEXAS-AUSTIN	NGR 44-012-152	Trafton, L. M.	11	3515
HQ-SL	Flinn, E. A.	UNIV TEXAS-AUSTIN	NGR 44-012-165	Silverberg, E. C.	32	3516
HQ-SL	Young, R. S.	UNIV TEXAS-AUSTIN	NGR 44-012-225	Parker, P. L.	32	3518
HQ-SL	Brunk, W. E.	UNIV TEXAS-AUSTIN	NGR 44-012-282	Mulholland, J. D.	11	3520
HQ-SL	Smith, M. J.	UNIV TEXAS-AUSTIN	NSG 7250	Muehlberger, W. R.	32	3540
HQ-SL	Dwornik, S. E.	UNIV TEXAS-AUSTIN	NSG 7326	Baker, V. R.	32	3541
HQ-SL	Goldstein, B. E.	UNIV TEXAS-AUSTIN	NSG 7363	Muehlberger, W. R.	32	3543
HQ-SL	Brunk, W. E.	UNIV TEXAS-AUSTIN	NSG 7408	Jefferys, W. H.	11	3546
HQ-SL	Murphy, R. E.	UNIV TEXAS-DALLAS	NGL 44-004-026	Johnson, F. S.	31	3558
HQ-SL	Quaide, W. L.	UNIV TEXAS-DALLAS	NSG 7034	Hodges, R. R., Jr.	31	3568
HQ-SL	Quaide, W. L.	UNIV TEXAS-GALVESTON	NSG 7418	Makamura, Y.	32	3574
HQ-SL	Donn, B. D.	UNIV OF TOLEDO	NSG 7301	Delsemme, A. H.	11	3166
HQ-SL	Quaide, W. L.	UNIV OF UTAH	NSG 7425	Shorthill, R. W.	32	3592
HQ-SL	Dwornik, S. E.	UNIV OF VIRGINIA	NGR 47-005-172	Howard, A.	32	3690
HQ-SL	Brunk, W. E.	UNIV OF VIRGINIA	NSG 7364	Ianna, P. A.	11	3704
HQ-SL	French, B. M.	UNIV OF WASHINGTON	NGR 48-002-033	Hodge, P. W.	11	3769
HQ-SL	Brunk, W. E.	UNIV OF WASHINGTON	NGR 48-002-142	Greene, T. F.	11	3771
HQ-SL	Fellows, R. F.	UNIV OF WASHINGTON	NSG 7085	Leovy, C. B.	31	3780
HQ-SL	Goldstein, B. E.	UNIV OF WASHINGTON	NSG 7173	Adams, J. B.	32	3781
HQ-SL	Quaide, W. L.	UNIV OF WASHINGTON	NSG 7174	Adams, J. B.	32	3782
HQ-SL	Quaide, W. L.	UNIV OF WASHINGTON	NSG 7313	McCallum, I. S.	32	3783
HQ-SL	Dwornik, S. E.	UNIV OF WASHINGTON	NSG 7448	Adams, J. B.	32	3785
HQ-SL	Murphy, R. E.	UNIV WISC-MADISON	NGR 50-002-189	Suomi, V. E.	31	3818
HQ-SL	Quaide, W. L.	UNIV WISC-MADISON	NSG 7215	Taylor, J. W.	32	3835
HQ-SL	Dwornik, S. E.	UNIV WISC-PARKSIDE	NGR 50-009-001	Smith, E. I.	32	3838
HQ-SL	Goldstein, B. E.	VA MILITARY INSTITUT	NSG 7355	Schreiber, H. D.	32	3707
HQ-SL	Brunk, W. E.	VIRGINIA POLY INST	NGL 47-004-080	McGee, H. A.	11	3717
HQ-SL	Quaide, W. L.	WASHINGTON UNIVERSTY	NSG 7016	Hohenberg, C. M.	32	2725
HQ-SL	Dwornik, S. E.	WASHINGTON UNIVERSTY	NSG 7087	Arvidson, R. E.	32	2726
HQ-SL	Brunk, W. E.	WASHINGTON UNIVERSTY	NSG 7334	Smith, W. H.	11	2727
HQ-SL	Fellows, R. F.	YALE UNIVERSITY	NGL 07-004-043	Cross, R. J., Jr.	31	1759
HQ-SL	Quaide, W. L.	YORK COLLEGE-NY	NSG 7454	Spergel, M. S.	13	3029
HQ-SM	Shirey, W. H.	UNIV TEXAS-AUSTIN	NASW 2974	Silverberg, E. C.	19	3512
HQ-ST	Cauffman, D. P.	BOSTON COLLEGE	NSG 7190	Eather, R. H.	13	2358
HQ-ST	Taylor, W. W.	BOSTON COLLEGE	NSG 7385	Eather, R. H.	39	2359
HQ-ST	Tomayko, D. W.	BOSTON COLLEGE	NSG 7468	Carovillano, R. L.	39	2360
HQ-ST	Taylor, W. W.	BOSTON UNIVERSITY	NSG 7254	Mendillo, M.	19	2365
HQ-ST	Bohlin, J. D.	CALIF INST OF TECH	NGL 05-002-034	Zirin, H.	11	1173
HQ-ST	Timothy, A. F.	CALIF INST OF TECH	NGR 05-002-345	Zirin, H.	13	1191
HQ-ST	Bohlin, J. D.	CALIF INST OF TECH	NSG 7342	Goldreich, P.	13	1209
HQ-ST	Bohlin, J. D.	CAL STATE U-NRTHRDGE	NSG 7456	Chapman, G. T.	13	1230
HQ-ST	Taylor, W. W.	CATHOLIC UNIVERSITY	NGR 09-005-063	Whang, Y. C.	13	1778
HQ-ST	Bohlin, J. D.	CATHOLIC UNIVERSITY	NSG 7422	Whang, Y. C.	13	1783
HQ-ST	King, J. H.	COLLEGE OF WM & MARY	NSG 7416	Montgomery, D. C.	19	3616
HQ-ST	Timothy, A. F.	COLUMBIA UNIVERSITY	NGR 33-008-189	Wolff, R. S.	11	2865
HQ-ST	Timothy, A. F.	COLUMBIA UNIVERSITY	NSG 7075	Novick, R.	11	2883
HQ-ST	Cauffman, D. P.	CORNELL UNIVERSITY	NGR 33-010-161	Farley, D. T.	13	2903
HQ-ST	Taylor, W. W.	DARTMOUTH COLLEGE	NGR 30-001-041	Morgan, M. G.	13	2749
HQ-ST	King, J. H.	DARTMOUTH COLLEGE	NSG 7292	Sonnerup, B.	39	2752
HQ-ST	King, J.	HARVARD UNIVERSITY	NASW 2952	McElroy, M. B.	33	2377
HQ-ST	Bohlin, J. D.	HARVARD UNIVERSITY	NGL 22-007-006	Parkinson, W. H.	13	2378
HQ-ST	Bohlin, J. D.	HARVARD UNIVERSITY	NGR 22-007-202	Parkinson, W. H.	11	2383

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HQ-ST	Simon, N. K.	HARVARD UNIVERSITY	NSG 2031	McElroy, M. B.	31	2387
HQ-ST	Bohlin, J. D.	HARVARD UNIVERSITY	NSG 5128	Reeves, E. M.	13	2390
HQ-ST	Bohlin, J. D.	HARVARD UNIVERSITY	NSG 7391	Maxwell, A.	13	2404
HQ-ST	Bohlin, J. D.	HARVARD UNIVERSITY	NSG 7461	Parkinson, W. H.	11	2406
HQ-ST	Kaiser, M. L.	JOHNS HOPKINS UNIV	NSG 7055	Krimigis, S. M.	13	2270
HQ-ST	Bohlin, J. D.	MICHIGAN STATE UNIV	NSG 7293	Stein, R. F.	13	2563
HQ-ST	Simon, N. K.	OHIO STATE UNIV	NASW 3149	Seliga, T. A.	31	3110
HQ-ST	King, J. H.	PENN STATE U-UNIV PK	NGL 39-009-003	Nisbet, J. S.	13	3252
HQ-ST	Tilford, S. G.	PENN STATE U-UNIV PK	NSG 7350	Hale, L. C.	31	3279
HQ-ST	Taylor, W. W.	POLY INST OF NY	NGR 33-006-047	Gross, S. H.	13	2944
HQ-ST	Cauffman, D. P.	RICE UNIVERSITY	NGL 44-006-012	Michel, F. C.	13	3412
HQ-ST	Taylor, W. W.	RICE UNIVERSITY	NGR 44-006-137	Dessler, A. J.	13	3414
HQ-ST	Quaide, W. L.	RICE UNIVERSITY	NSG 7157	Freeman, J. W., Jr.	32	3419
HQ-ST	Cauffman, D. P.	STANFORD UNIVERSITY	NGL 05-020-008	Helliwell, R. A.	13	1319
HQ-ST	King, J. H.	STANFORD UNIVERSITY	NGL 05-020-176	Crawford, F. W.	13	1322
HQ-ST	Bohlin, J. D.	STANFORD UNIVERSITY	NGL 05-020-272	Sturrock, P. A.	13	1324
HQ-ST	Taylor, W. W.	STANFORD UNIVERSITY	NGR 05-020-001	DaRosa, A. V.	13	1327
HQ-ST	Bohlin, J. D.	STANFORD UNIVERSITY	NGR 05-020-559	Wilcox, J. M.	11	1333
HQ-ST	Bohlin, J. D.	STANFORD UNIVERSITY	NSG 7092	Petrosian, V.	11	1381
HQ-ST	Greenwood, L. R.	STATE UNIV NY-ALBANY	NSG 7222	Kiang, C. S.	31	2985
HQ-ST	Bohlin, J. D.	STATE U NY-STONY BRK	NSG 7003	Stroke, G. W.	11	3009
HQ-ST	Taylor, W. W.	UNIV ALASKA-FAIRBNKS	NSG 7281	Akasofu, S. I.	39	1074
HQ-ST	King, J. H.	UNIV ALASKA-FAIRBNKS	NSG 7447	Akasofu, S. I.	31	1075
HQ-ST	Kaiser, M. L.	UNIV OF ARIZONA	NGR 03-002-107	Hsieh, K. C.	13	1116
HQ-ST	Taylor, W. W.	UNIV OF ARIZONA	NSG 7024	Sonett, C. P.	13	1136
HQ-ST	Bohlin, J. D.	UNIV OF ARIZONA	NSG 7168	Levy, E. H.	13	1143
HQ-ST	King, J. H.	UNIV CALIF-BERKELEY	NGL 05-003-017	Anderson, K. A.	19	1411
HQ-ST	Bissell, E. E.	UNIV CALIF-BERKELEY	NGR 05-003-239	Mozer, F. S.	13	1418
HQ-ST	Kaiser, M. L.	UNIV CALIF-BERKELEY	NSG 7401	Mozer, F. S.	19	1452
HQ-ST	Newton, G. P.	UNIV CALIF-IRVINE	NSG 7208	Molina, M. J.	31	1464
HQ-ST	Bohlin, J. D.	UNIV CALIF-IRVINE	NSG 7375	VanHoven, G.	13	1465
HQ-ST	Cauffman, D. P.	UNIV CALIF-L ANGELES	NGL 05-007-004	Coleman, P. J., Jr.	39	1479
HQ-ST	King, J. H.	UNIV CALIF-L ANGELES	NGL 05-007-190	Kennel, C. F.	19	1480
HQ-ST	Taylor, W. W.	UNIV CALIF-L ANGELES	NGR 05-007-276	Holzer, R. E.	13	1483
HQ-ST	Timothy, A. F.	UNIV CALIF-L ANGELES	NSG 7158	Ulrich, R. K.	13	1513
HQ-ST	King, J. H.	UNIV CALIF-L ANGELES	NSG 7180	Siscoe, G. L.	39	1515
HQ-ST	Taylor, W. W.	UNIV CALIF-L ANGELES	NSG 7276	Coleman, P. J., Jr.	39	1517
HQ-ST	Bohlin, J. D.	UNIV CALIF-L ANGELES	NSG 7407	Ulrich, R. K.	13	1523
HQ-ST	King, J. H.	UNIV CALIF-SAN DIEGO	NGL 05-005-007	McIlwain, C. E.	13	1541
HQ-ST	Taylor, W. W.	UNIV CALIF-SAN DIEGO	NGR 05-009-075	Banks, P. M.	13	1550
HQ-ST	Bohlin, J. D.	UNIV CALIF-SAN DIEGO	NSG 7100	Hudson, H. S.	13	1567
HQ-ST	Timothy, A. F.	UNIV CALIF-SAN DIEGO	NSG 7161	Peterson, L. E.	13	1570
HQ-ST	Bohlin, J. D.	UNIV CALIF-SAN DIEGO	NSG 7406	Canfield, R. C.	13	1573
HQ-ST	Taylor, W. W.	UNIV OF CHICAGO	NSG 7288	Simpson, J. A.	31	2055
HQ-ST	Seals, R. K., Jr.	UNIV OF CHICAGO	NSG 7356	Kaplan, L. D.	31	2057
HQ-ST	Bohlin, J. D.	UNIV COLORADO-BOLDR	NGL 06-003-057	Gebbie, K. B.	13	1695
HQ-ST	Bohlin, J. D.	UNIV COLORADO-BOLDR	NSG 7130	Hansen, E.	13	1718
HQ-ST	Bohlin, J. D.	UNIV COLORADO-BOLDR	NSG 7165	Chipman, E. G.	13	1719
HQ-ST	Timothy, A. F.	UNIV COLORADO-BOLDR	NSG 7166	Roberts, W. O.	13	1720
HQ-ST	Seals, R. K., Jr.	UNIV COLORADO-BOLDR	NSG 7231	Thomas, R. J.	31	1721
HQ-ST	Bohlin, J. D.	UNIV COLORADO-BOLDR	NSG 7287	Dulk, G. A.	13	1722
HQ-ST	Bohlin, J. D.	UNIV COLORADO-BOLDR	NSG 7291	Thomas, R. N.	13	1723
HQ-ST	Schmerling, E. R.	UNIV OF DENVER	NGR 06-004-058	Patel, V. L.	13	1741
HQ-ST	Taylor, W. W.	UNIV OF DENVER	NGR 06-004-060	Roederer, J. G.	13	1742
HQ-ST	Newton, G. P.	UNIV OF DENVER	NSG 7271	Fernald, F. G.	31	1747
HQ-ST	Seals, R. K., Jr.	UNIV OF DENVER	NSG 7354	Murcray, D. G.	31	1748
HQ-ST	Bohlin, J. D.	UNIV OF HAWAII-MANOA	NGL 12-001-011	Jefferies, J. T.	11	1987
HQ-ST	Schmerling, E. R.	UNIV HOUSTON-HOUSTON	NGR 44-005-133	Sheldon, W. R.	31	3479

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HQ-ST	King, J.	UNIV ILLINOIS-URBANA	W-14133	Unavailable	31	2085
HQ-ST	King, J. H.	UNIV OF IOWA	NGL 16-001-002	VanAllen, J. A.	13	2156
HQ-ST	King, J. H.	UNIV OF IOWA	NGL 16-001-043	Gurnett, D. A.	13	2157
HQ-ST	King, J. H.	UNIV MARYLAND-COL PK	NGL 21-002-005	Wu, C. S.	19	2300
HQ-ST	Bohlin, J. D.	UNIV MARYLAND-COL PK	NGR 21-002-199	Kundu, M. R.	13	2306
HQ-ST	Timothy, A. F.	UNIV MARYLAND-COL PK	NSG 7285	Kundu, M. R.	13	2346
HQ-ST	Tilford, S. G.	UNIV MARYLAND-COL PK	NSG 7340	Ginter, M. L.	13	2348
HQ-ST	Bohlin, J. D.	UNIV MARYLAND-COL PK	NSG 7427	Spicer, D. S.	13	2350
HQ-ST	Timothy, A. F.	UNIV OF MASS-AMHERST	NGL 22-010-025	Strong, J.	11	2551
HQ-ST	Tilford, S. G.	UNIV MICH-ANN ARBOR	NASW 3065	Anderson, J. G.	11	2596
HQ-ST	Bohlin, J. D.	UNIV MICH-ANN ARBOR	NGL 23-005-275	Mohler, O. C.	11	2598
HQ-ST	Cauffman, D. P.	UNIV MICH-ANN ARBOR	NGR 23-005-015	Nagy, A. F.	31	2599
HQ-ST	Cauffman, D. P.	UNIV MICH-ANN ARBOR	NGR 23-005-320	Samir, U.	13	2601
HQ-ST	Tilford, S. G.	UNIV MICH-ANN ARBOR	NSG 7187	Cicerone, R. J.	12	2628
HQ-ST	Tilford, S. G.	UNIV MICH-ANN ARBOR	NSG 7209	Donahue, T. M.	31	2629
HQ-ST	King, J. H.	U MINN-MNPLS-ST PAUL	NSG 7005	Winckler, J. R.	39	2664
HQ-ST	Taylor, W. L.	U MINN-MNPLS-ST PAUL	NSG 7108	Kellogg, P. J.	19	2665
HQ-ST	Seals, R. K., Jr.	U MINN-MNPLS-ST PAUL	NSG 7221	Mauersberger, K.	31	2666
HQ-ST	Cauffman, D. P.	U MINN-MNPLS-ST PAUL	NSG 7237	Cahill, L. J., Jr.	19	2667
HQ-ST	Bohlin, J. D.	UNIV NEW HAMP-DURHAM	NGL 30-002-018	Chupp, E. L.	13	2756
HQ-ST	Bohlin, J. D.	UNIV NEW HAMP-DURHAM	NSG 7411	Fisk, L. A.	13	2761
HQ-ST	Tilford, S. G.	UNIV OREGON-EUGENE	NSG 7360	Nolt, I. G.	31	3204
HQ-ST	Simon, N. K.	UNIV OF PITTSBURGH	NGR 39-011-161	Kaufman, F.	12	3296
HQ-ST	Cauffman, D. P.	UNIV OF SOUTHERN CAL	NGR 05-018-181	Intriligator, D. S.	13	1640
HQ-ST	Cauffman, D. P.	UNIV OF SOUTHERN CAL	NGR 05-018-185	Intriligator, D. S.	13	1641
HQ-ST	Bohlin, J. D.	UNIV TENNESSEE-KNOXV	NSG 7049	Sellin, I. A.	11	3367
HQ-ST	Timothy, A. F.	UNIV TEXAS-AUSTIN	NGR 44-012-258	Bengtson, P. D.	11	3519
HQ-ST	Cauffman, D. P.	UNIV TEXAS-DALLAS	NGR 44-004-030	Heikkila, W. J.	13	3560
HQ-ST	King, J. H.	UNIV TEXAS-DALLAS	NGR 44-004-120	Hanson, W. B.	31	3561
HQ-ST	Cauffman, D. P.	UNIV WISC-MADISON	NGR 50-002-162	Scherb, F.	13	3817
HQ-ST	*Tilford, S. G.*	UNIV WISC-MADISON	NSG 7390	Suomi, V. E.	31	3836
HQ-ST	King, J., Jr.	UNIV OF WYOMING	NSG 7207	Hofmann, D. J.	31	3848
HQ-ST	Kakar, R. K.	UNIV OF WYOMING	NSG 7349	Hofmann, D. J.	31	3849
HQ-ST	Tilford, S. G.	UTAH STATE UNIV	NSG 7206	Moore, W. M.	12	3600
HQ-ST	Tilford, S. G.	UTAH STATE UNIV	NSG 7210	Baker, K. D.	31	3601
HQ-ST	Kaiser, M. L.	UTAH STATE UNIV	NSG 7289	Banks, P. M.	31	3602
HQ-ST	Tilford, S. G.	UTAH STATE UNIV	NSG 7388	Megill, L. R.	31	3603
HQ-ST	Tilford, S. G.	WASHINGTON ST UNIV	NSG 7214	Cronn, D.	31	3790
HQ-ST	Newton, G. P.	YORK UNIVERSITY	NGR 52-134-005	Schiff, H. I.	31	3853
HQ-ST	Newton, G. P.	OREGON GRADUATE CTR	NSG 7457	Rasmussen, R. A.	31	3190
HQ-U	Monroe, R.	PRATT INSTITUTE	NASW 3142	Randall, J. T., Jr.	99	2955